

# FEDERAL OPERATING PERMIT

A FEDERAL OPERATING PERMIT IS HEREBY ISSUED TO  
Eco Services Operations Corp.

AUTHORIZING THE OPERATION OF  
Houston Plant  
Houston Plant  
All Other Basic Inorganic Chemical Manufacturing

LOCATED AT  
Harris County, Texas  
Latitude 29° 43' 11" Longitude 95° 16' 18"  
Regulated Entity Number: RN100220581

This permit is issued in accordance with and subject to the Texas Clean Air Act (TCAA), Chapter 382 of the Texas Health and Safety Code and Title 30 Texas Administrative Code Chapter 122 (30 TAC Chapter 122), Federal Operating Permits. Under 30 TAC Chapter 122, this permit constitutes the permit holder's authority to operate the site and emission units listed in this permit. Operations of the site and emission units listed in this permit are subject to all additional rules or amended rules and orders of the Commission pursuant to the TCAA.

This permit does not relieve the permit holder from the responsibility of obtaining New Source Review authorization for new, modified, or existing facilities in accordance with 30 TAC Chapter 116, Control of Air Pollution by Permits for New Construction or Modification.

The site and emission units authorized by this permit shall be operated in accordance with 30 TAC Chapter 122, the general terms and conditions, special terms and conditions, and attachments contained herein.

This permit shall expire five years from the date of issuance. The renewal requirements specified in 30 TAC § 122.241 must be satisfied in order to renew the authorization to operate the site and emission units.

Permit No:       O3049       Issuance Date: \_\_\_\_\_

\_\_\_\_\_  
For the Commission

## Table of Contents

Section	Page
General Terms and Conditions .....	1
Special Terms and Conditions: .....	1
Emission Limitations and Standards, Monitoring and Testing, and Recordkeeping and Reporting.....	1
Additional Monitoring Requirements .....	11
New Source Review Authorization Requirements .....	12
Compliance Requirements.....	13
Risk Management Plan .....	14
Permit Location .....	14
Permit Shield (30 TAC § 122.148) .....	14
Attachments .....	16
Applicable Requirements Summary.....	17
Additional Monitoring Requirements .....	48
Permit Shield .....	67
New Source Review Authorization References .....	69
Appendix A .....	73
Acronym List .....	74
Appendix B .....	75

## **General Terms and Conditions**

The permit holder shall comply with all terms and conditions contained in 30 TAC § 122.143 (General Terms and Conditions), 30 TAC § 122.144 (Recordkeeping Terms and Conditions), 30 TAC § 122.145 (Reporting Terms and Conditions), and 30 TAC § 122.146 (Compliance Certification Terms and Conditions).

In accordance with 30 TAC § 122.144(1), records of required monitoring data and support information required by this permit, or any applicable requirement codified in this permit, are required to be maintained for a period of five years from the date of the monitoring report, sample, or application unless a longer data retention period is specified in an applicable requirement. The five year record retention period supersedes any less stringent retention requirement that may be specified in a condition of a permit identified in the New Source Review Authorization attachment.

If the permit holder chooses to demonstrate that this permit is no longer required, a written request to void this permit shall be submitted to the Texas Commission on Environmental Quality (TCEQ) by the Responsible Official in accordance with 30 TAC § 122.161(e). The permit holder shall comply with the permit's requirements, including compliance certification and deviation reporting, until notified by the TCEQ that this permit is voided.

The permit holder shall comply with 30 TAC Chapter 116 by obtaining a New Source Review authorization prior to new construction or modification of emission units located in the area covered by this permit.

All reports required by this permit must include in the submittal a cover letter which identifies the following information: company name, TCEQ regulated entity number, air account number (if assigned), site name, area name (if applicable), and Air Permits Division permit number(s).

## **Special Terms and Conditions:**

### **Emission Limitations and Standards, Monitoring and Testing, and Recordkeeping and Reporting**

1. Permit holder shall comply with the following requirements:
  - A. Emission units (including groups and processes) in the Applicable Requirements Summary attachment shall meet the limitations, standards, equipment specifications, monitoring, recordkeeping, reporting, testing, and other requirements listed in the Applicable Requirements Summary attachment to assure compliance with the permit.
  - B. The textual description in the column titled "Textual Description" in the Applicable Requirements Summary attachment is not enforceable and is not deemed as a substitute for the actual regulatory language. The Textual Description is provided for information purposes only.
  - C. A citation listed on the Applicable Requirements Summary attachment, which has a notation [G] listed before it, shall include the referenced section and subsection for all commission rules, or paragraphs for all federal and state regulations and all subordinate paragraphs, subparagraphs and clauses, subclauses, and items contained within the referenced citation as applicable requirements.
  - D. When a grouped citation, notated with a [G] in the Applicable Requirements Summary, contains multiple compliance options, the permit holder must keep records of when each compliance option was used.
  - E. Emission units subject to 40 CFR Part 63, Subparts G, GGG, and ZZZZ as identified in the attached Applicable Requirements Summary table are subject to 30 TAC Chapter

113, Subchapter C, § 113.120, § 113.640, and § 113.1090 which incorporates the 40 CFR Part 63 Subpart by reference.

- F. The permit holder shall comply with the following 30 TAC Chapter 101, Subchapter H, Division 3 (Mass Emission Cap and Trade Program) Requirements:
  - (i) Title 30 TAC § 101.352 (relating to General Provisions)
  - (ii) Title 30 TAC § 101.353 (relating to Allocation of Allowances)
  - (iii) Title 30 TAC § 101.354 (relating to Allowance Deductions)
  - (iv) Title 30 TAC § 101.356 (relating to Allowance Banking and Trading)
  - (v) Title 30 TAC § 101.359 (relating to Reporting)
  - (vi) Title 30 TAC § 101.360 (relating to Level of Activity Certification)
  - (vii) The terms and conditions by which the emission limits are established to meet or exceed the cap are applicable requirements of this permit
- 2. The permit holder shall comply with the following sections of 30 TAC Chapter 101 (General Air Quality Rules):
  - A. Title 30 TAC § 101.1 (relating to Definitions), insofar as the terms defined in this section are used to define the terms used in other applicable requirements
  - B. Title 30 TAC § 101.3 (relating to Circumvention)
  - C. Title 30 TAC § 101.8 (relating to Sampling), if such action has been requested by the TCEQ
  - D. Title 30 TAC § 101.9 (relating to Sampling Ports), if such action has been requested by the TCEQ
  - E. Title 30 TAC § 101.10 (relating to Emissions Inventory Requirements)
  - F. Title 30 TAC § 101.201 (relating to Emission Event Reporting and Recordkeeping Requirements)
  - G. Title 30 TAC § 101.211 (relating to Scheduled Maintenance, Start-up, and Shutdown Reporting and Recordkeeping Requirements)
  - H. Title 30 TAC § 101.221 (relating to Operational Requirements)
  - I. Title 30 TAC § 101.222 (relating to Demonstrations)
  - J. Title 30 TAC § 101.223 (relating to Actions to Reduce Excessive Emissions)
- 3. Permit holder shall comply with the following requirements of 30 TAC Chapter 111:
  - A. Visible emissions from stationary vents with a flow rate of less than 100,000 actual cubic feet per minute and constructed after January 31, 1972 that are not listed in the Applicable Requirements Summary attachment for 30 TAC Chapter 111, Subchapter A, Division 1, shall not exceed 20% opacity averaged over a six-minute period. The permit

holder shall comply with the following requirements for stationary vents at the site subject to this standard:

- (i) Title 30 TAC § 111.111(a)(1)(B) (relating to Requirements for Specified Sources)
- (ii) Title 30 TAC § 111.111(a)(1)(E)
- (iii) Title 30 TAC § 111.111(a)(1)(F)(i), (ii), (iii), or (iv)
- (iv) For emission units with vent emissions subject to 30 TAC § 111.111(a)(1)(B), complying with 30 TAC § 111.111(a)(1)(F)(ii), (iii), or (iv), and capable of producing visible emissions from, but not limited to, particulate matter, acid gases and NO<sub>x</sub>, the permit holder shall also comply with the following periodic monitoring requirements for the purpose of annual compliance certification under 30 TAC § 122.146. These periodic monitoring requirements do not apply to vents that are not capable of producing visible emissions such as vents that emit only colorless VOCs; vents from non-fuming liquids; vents that provide passive ventilation, such as plumbing vents; or vent emissions from any other source that does not obstruct the transmission of light. Vents, as specified in the "Applicable Requirements Summary" attachment, that are subject to the emission limitation of 30 TAC § 111.111(a)(1)(B) are not subject to the following periodic monitoring requirements:
  - (1) An observation of stationary vents from emission units in operation shall be conducted at least once during each calendar quarter unless the emission unit is not operating for the entire quarter.
  - (2) For stationary vents from a combustion source, if an alternative to the normally fired fuel is fired for a period greater than or equal to 24 consecutive hours, the permit holder shall conduct an observation of the stationary vent for each such period to determine if visible emissions are present. If such period is greater than 3 months, observations shall be conducted once during each quarter. Supplementing the normally fired fuel with natural gas or fuel gas to increase the net heating value to the minimum required value does not constitute creation of an alternative fuel.
  - (3) Records of all observations shall be maintained.
  - (4) Visible emissions observations of emission units operated during daylight hours shall be conducted no earlier than one hour after sunrise and no later than one hour before sunset. Visible emissions observations of emission units operated only at night must be made with additional lighting and the temporary installation of contrasting backgrounds. Visible emissions observations shall be made during times when the activities described in 30 TAC § 111.111(a)(1)(E) are not taking place. Visible emissions shall be determined with each stationary vent in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 mile, away from each stationary vent during the observation. For outdoor locations, the observer shall select a position where the sun is not directly in the observer's eyes. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet

prior to condensation of water vapor. A certified opacity reader is not required for visible emissions observations.

(5) Compliance Certification:

- (a) If visible emissions are not present during the observation, the RO may certify that the source is in compliance with the applicable opacity requirement in 30 TAC § 111.111(a)(1) and (a)(1)(B).
- (b) However, if visible emissions are present during the observation, the permit holder shall either list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2) or conduct the appropriate opacity test specified in 30 TAC § 111.111(a)(1)(F) as soon as practicable, but no later than 24 hours after observing visible emissions to determine if the source is in compliance with the opacity requirements. If an opacity test is performed and the source is determined to be in compliance, the RO may certify that the source is in compliance with the applicable opacity requirement. However, if an opacity test is performed and the source is determined to be out of compliance, the permit holder shall list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2). The opacity test must be performed by a certified opacity reader.
- (c) Some vents may be subject to multiple visible emission or monitoring requirements. All credible data must be considered when certifying compliance with this requirement even if the observation or monitoring was performed to demonstrate compliance with a different requirement.

B. For visible emissions from a building, enclosed facility, or other structure; the permit holder shall comply with the following requirements:

- (i) Title 30 TAC § 111.111(a)(7)(A) (relating to Requirements for Specified Sources)
- (ii) Title 30 TAC § 111.111(a)(7)(B)(i) or (ii)
- (iii) For a building containing an air emission source, enclosed facility, or other structure containing or associated with an air emission source subject to 30 TAC § 111.111(a)(7)(A), complying with 30 TAC § 111.111(a)(7)(B)(i) or (ii), and capable of producing visible emissions from, but not limited to, particulate matter, acid gases and NO<sub>x</sub>, the permit holder shall also comply with the following periodic monitoring requirements for the purpose of annual compliance certification under 30 TAC § 122.146:
  - (1) An observation of visible emissions from a building containing an air emission source, enclosed facility, or other structure containing or associated with an air emission source which is required to comply with 30 TAC § 111.111(a)(7)(A) shall be conducted at least once during each calendar quarter unless the air emission source or enclosed facility is not operating for the entire quarter.
  - (2) Records of all observations shall be maintained.

- (3) Visible emissions observations of air emission sources or enclosed facilities operated during daylight hours shall be conducted no earlier than one hour after sunrise and no later than one hour before sunset. Visible emissions observations of air emission sources or enclosed facilities operated only at night must be made with additional lighting and the temporary installation of contrasting backgrounds. Visible emissions shall be determined with each emissions outlet in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 mile, away from each emissions outlet during the observation. For outdoor locations, the observer shall select a position where the sun is not directly in the observer's eyes. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor. A certified opacity reader is not required for visible emissions observations.
  - (4) Compliance Certification:
    - (a) If visible emissions are not present during the observation, the RO may certify that the source is in compliance with the applicable opacity requirement in 30 TAC § 111.111(a)(7) and (a)(7)(A).
    - (b) However, if visible emissions are present during the observation, the permit holder shall either list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2) or conduct the appropriate opacity test specified in 30 TAC § 111.111(a)(7)(B) as soon as practicable, but no later than 24 hours after observing visible emissions to determine if the source is in compliance with the opacity requirements. If an opacity test is performed and the source is determined to be in compliance, the RO may certify that the source is in compliance with the applicable opacity requirement. However, if an opacity test is performed and the source is determined to be out of compliance, the permit holder shall list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2). The opacity test must be performed by a certified opacity reader.
- C. Certification of opacity readers determining opacities under Method 9 (as outlined in 40 CFR Part 60, Appendix A) to comply with opacity monitoring requirements shall be accomplished by completing the Visible Emissions Evaluators Course, or approved agency equivalent, no more than 180 days before the opacity reading.
- D. For emission units with contributions from uncombined water, the permit holder shall comply with the requirements of 30 TAC § 111.111(b).
- E. Permit holders for sites that have materials handling, construction, roads, streets, alleys, and parking lots shall comply with the following requirements:
  - (i) Title 30 TAC § 111.143 (relating to Materials Handling)
  - (ii) Title 30 TAC § 111.145 (relating to Construction and Demolition)

- (iii) Title 30 TAC § 111.147 (relating to Roads, Streets, and Alleys)
  - (iv) Title 30 TAC § 111.149 (relating to Parking Lots)
- F. Emission limits on nonagricultural processes, except for the steam generators specified in 30 TAC § 111.153, shall comply with the following requirements:
  - (i) Emissions of PM from any source may not exceed the allowable rates as required in 30 TAC § 111.151(a) (relating to Allowable Emissions Limits)
  - (ii) Sources with an effective stack height ( $h_e$ ) less than the standard effective stack height ( $H_e$ ), must reduce the allowable emission level by multiplying it by  $[h_e/H_e]^2$  as required in 30 TAC § 111.151(b)
  - (iii) Effective stack height shall be calculated by the equation specified in 30 TAC § 111.151(c)
- 4. Permit holder shall comply with the following 30 TAC Chapter 115, Subchapter C requirements:
  - A. When filling stationary gasoline storage vessels (Stage I) for motor vehicle fuel dispensing facilities, constructed prior to November 15, 1992, with transfers to stationary storage tanks located at a facility which has dispensed no more than 10,000 gallons of gasoline in any calendar month after January 1, 1991, the permit holder shall comply with the following requirements specified in 30 TAC Chapter 115, Subchapter C:
    - (i) Title 30 TAC § 115.222(3) (relating to Control Requirements), as it applies to liquid gasoline leaks, visible vapors, or significant odors
    - (ii) Title 30 TAC § 115.222(6) (relating to Control Requirements)
    - (iii) Title 30 TAC § 115.224(1) (relating to Inspection Requirements), as it applies to liquid gasoline leaks, visible vapors, or significant odors
    - (iv) Title 30 TAC § 115.226(2)(B) (relating to Recordkeeping Requirements)
- 5. The permit holder shall comply with the following requirements of 30 TAC Chapter 115, Subchapter F, Division 3, Degassing of Storage Tanks, Transport Vessels and Marine Vessels:
  - A. For degassing of stationary VOC storage tanks, the permit holder shall comply with the following requirements:
    - (i) Title 30 TAC § 115.541(a) - (c) (relating to Emission Specifications)
    - (ii) Title 30 TAC § 115.541(f) (relating to Emission Specifications), for floating roof storage tanks
    - (iii) Title 30 TAC § 115.542(a) and (a)(1), (a)(2), (a)(3) or (a)(4) (relating to Control Requirements). Where the requirements of 30 TAC Chapter 115, Subchapter F contain multiple compliance options, the permit holder shall keep records of when each compliance option was used.
    - (iv) Title 30 TAC § 115.542(b) - (d), (relating to Control Requirements)
    - (v) Title 30 TAC § 115.543 (relating to Alternate Control Requirements)



- (vi) Title 30 TAC § 115.544(a)(1) and (a)(2) (relating to Inspection, Monitoring, and Testing Requirements), for inspections
- (vii) Title 30 TAC § 115.544(b) (relating to Inspection, Monitoring, and Testing Requirements), for monitoring
- (viii) Title 30 TAC § 115.544(b)(1) and (b)(2) (relating to Inspection, Monitoring, and Testing Requirements), for monitoring of control devices
- (ix) Title 30 TAC § 115.544(b)(2)(A) - (J) (relating to Inspection, Monitoring, and Testing Requirements), for monitoring (as appropriate to the control device)
- (x) Title 30 TAC § 115.544(b)(3), (b)(4) and (b)(6) (relating to Inspection, Monitoring, and Testing Requirements), for VOC concentration or lower explosive limit threshold monitoring
- (xi) Title 30 TAC § 115.544(c), and (c)(1) - (c)(3) (relating to Inspection, Monitoring, and Testing Requirements), for testing of control devices used to comply with 30 TAC § 115.542(a)(1)
- (xii) Title 30 TAC § 115.545(1) - (7), (9) - (11) and (13) (relating to Approved Test Methods)
- (xiii) Title 30 TAC § 115.546(a), (a)(1) and (a)(3) (relating to Recordkeeping and Notification Requirements), for recordkeeping
- (xiv) Title 30 TAC § 115.546(a)(2) and (a)(2)(A) - (J) (relating to Recordkeeping and Notification Requirements), for recordkeeping (as appropriate to the control device)
- (xv) Title 30 TAC § 115.546(a)(4) (relating to Recordkeeping and Notification Requirements), for recordkeeping of testing of control devices used to comply with 30 TAC § 115.542(a)(1)
- (xvi) Title 30 TAC § 115.546(b) (relating to Recordkeeping and Notification Requirements), for notification
- (xvii) Title 30 TAC § 115.547(4) (relating to Exemptions)

B. For the degassing of all transport vessels with a nominal capacity of 8,000 gallons or more, the permit holder shall comply with the following requirements:

- (i) Title 30 TAC § 115.541(a) - (c) and (d) (relating to Emission Specifications)
- (ii) Title 30 TAC § 115.542(a) and (a)(1), (a)(2), (a)(3) or (a)(4) (relating to Control Requirements). Where the requirements of 30 TAC Chapter 115, Subchapter F contain multiple compliance options, the permit holder shall keep records of when each compliance option was used.
- (iii) Title 30 TAC § 115.542(b), (c) and (e) (relating to Control Requirements)
- (iv) Title 30 TAC § 115.543 (relating to Alternate Control Requirements)
- (v) Title 30 TAC § 115.544(a)(1) and (a)(2) (relating to Inspection, Monitoring, and Testing Requirements), for inspections

- (vi) Title 30 TAC § 115.544(b) (relating to Inspection, Monitoring, and Testing Requirements), for monitoring
  - (vii) Title 30 TAC § 115.544(b)(1) and (b)(2) (relating to Inspection, Monitoring, and Testing Requirements), for monitoring of control devices
  - (viii) Title 30 TAC § 115.544(b)(2)(A) - (J) (relating to Inspection, Monitoring, and Testing Requirements), for monitoring (as appropriate to the control device)
  - (ix) Title 30 TAC § 115.544(b)(3), (b)(4) and (b)(6) (relating to Inspection, Monitoring, and Testing Requirements), for VOC concentration or lower explosive limit threshold monitoring
  - (x) Title 30 TAC § 115.544(c), and (c)(1) - (c)(3) (relating to Inspection, Monitoring, and Testing Requirements), for testing of control devices used to comply with 30 TAC § 115.542(a)(1)
  - (xi) Title 30 TAC § 115.545(1) - (11) and (13) (relating to Approved Test Methods)
  - (xii) Title 30 TAC § 115.546(a), (a)(1) and (a)(3) (relating to Recordkeeping and Notification Requirements), for recordkeeping
  - (xiii) Title 30 TAC § 115.546(a)(2) and (a)(2)(A) - (J) (relating to Recordkeeping and Notification Requirements), for recordkeeping (as appropriate to the control device)
  - (xiv) Title 30 TAC § 115.546(a)(4) (relating to Recordkeeping and Notification Requirements), for recordkeeping of testing of control devices used to comply with 30 TAC § 115.542(a)(1)
  - (xv) Title 30 TAC § 115.546(b) (relating to Recordkeeping and Notification Requirements), for notification
6. The permit holder shall comply with the requirements of 30 TAC § 115.722(b) (relating to Site-wide Cap and Control Requirements) and the requirements of 30 TAC § 115.726(g) (relating to Recordkeeping and Reporting Requirements).
7. The permit holder shall comply with the following requirements for units subject to any subpart of 40 CFR Part 60, unless otherwise stated in the applicable subpart:
- A. Title 40 CFR § 60.7 (relating to Notification and Recordkeeping)
  - B. Title 40 CFR § 60.8 (relating to Performance Tests)
  - C. Title 40 CFR § 60.11 (relating to Compliance with Standards and Maintenance Requirements)
  - D. Title 40 CFR § 60.12 (relating to Circumvention)
  - E. Title 40 CFR § 60.13 (relating to Monitoring Requirements)
  - F. Title 40 CFR § 60.14 (relating to Modification)
  - G. Title 40 CFR § 60.15 (relating to Reconstruction)

- H. Title 40 CFR § 60.19 (relating to General Notification and Reporting Requirements)
- 8. The permit holder shall comply with the following requirements for units subject to any subpart of 40 CFR Part 61, unless otherwise stated in the applicable subpart:
  - A. Title 40 CFR § 61.05 (relating to Prohibited Activities)
  - B. Title 40 CFR § 61.07 (relating to Application for Approval of Construction or Modification)
  - C. Title 40 CFR § 61.09 (relating to Notification of Start-up)
  - D. Title 40 CFR § 61.10 (relating to Source Reporting and Request Waiver)
  - E. Title 40 CFR § 61.12 (relating to Compliance with Standards and Maintenance Requirements)
  - F. Title 40 CFR § 61.13 (relating to Emissions Tests and Waiver of Emission Tests)
  - G. Title 40 CFR § 61.14 (relating to Monitoring Requirements)
  - H. Title 40 CFR § 61.15 (relating to Modification)
  - I. Title 40 CFR § 61.19 (relating to Circumvention)
- 9. For facilities where total annual benzene quantity from waste is greater than or equal to 10 megagrams per year and subject to emission standards in 40 CFR Part 61, Subpart FF, the permit holder shall comply with the following requirements:
  - A. Title 40 CFR § 61.342(c)(1)(i) - (iii) (relating to Standards: General)
  - B. Title 40 CFR § 61.342(c)(2) (relating to Standards: General)
  - C. Title 40 CFR § 61.342(f)(1), and (2) (relating to Standards: General)
  - D. Title 40 CFR § 61.342(g) (relating to Standards: General)
  - E. Title 40 CFR § 61.350(a) and (b) (relating to Standards: Delay of Repair)
  - F. Title 40 CFR § 61.355(b)(3) (relating to Test Methods, Procedures, and Compliance Provisions)
  - G. Title 40 CFR § 61.356(a) (relating to Recordkeeping Requirements)
  - H. Title 40 CFR § 61.356(b), and (b)(1) (relating to Recordkeeping Requirements)
  - I. Title 40 CFR § 61.356(b)(5) (relating to Recordkeeping Requirements)
  - J. Title 40 CFR § 61.356(c) (relating to Recordkeeping Requirements)
  - K. Title 40 CFR § 61.357(a), (d)(1), (d)(2) (d)(6) and (d)(8) (relating to Reporting Requirements)
- 10. For facilities with containers subject to emission standards in 40 CFR Part 61, Subpart FF, the permit holder shall comply with the following requirements:

- A. Title 40 CFR § 61.345(a)(1) - (3), (b), and (c) (relating to Standards: Containers)
  - B. Title 40 CFR § 61.355(h) (relating to Test Methods, Procedures and Compliance Provisions)
  - C. Title 40 CFR § 61.356(g) (relating to Recordkeeping Requirements)
  - D. Title 40 CFR § 61.356(h) (relating to Recordkeeping Requirements)
11. The permit holder shall comply with the requirements of 30 TAC Chapter 113, Subchapter C, § 113.100 for units subject to any subpart of 40 CFR Part 63, unless otherwise stated in the applicable subpart.
12. For the chemical manufacturing facilities with a 40 CFR Part 63, Subpart G Group 1 or Group 2 wastewater streams that are also subject to 40 CFR Part 61, Subpart FF, the permit holder shall comply with the following requirements (Title 30 TAC Chapter 113, Subchapter C, § 113.120 incorporated by reference):
- A. Title 40 CFR § 63.110(e)(1) (relating to Applicability), for 40 CFR Part 63, Subpart G applicability to Group 1 or 2 Wastewater Streams
13. For the chemical manufacturing facilities with a 40 CFR Part 63, Subpart G Group 2 wastewater stream, the permit holder shall comply with (Title 30 TAC Chapter 113, Subchapter C, § 113.120 incorporated by reference):
- A. Title 40 CFR § 63.132(a), (a)(1), and (a)(1)(i) (relating to Process Wastewater Provisions - General)
  - B. Title 40 CFR § 63.146(b)(1) (relating to Process Wastewater Provisions - Reporting)
  - C. Title 40 CFR § 63.147(b)(8) (relating to Process Wastewater Provisions - Recordkeeping)
14. For the chemical manufacturing facilities subject to leak detection requirements in 40 CFR Part 63, Subpart G, the permit holder shall comply with the following requirements (Title 30 TAC Chapter 113, Subchapter C, § 113.120 incorporated by reference):
- A. General Leak Detection Requirements:
    - (i) Title 40 CFR § 63.148(d)(1) - (3), and (e) (relating to Leak Inspection Provisions)
    - (ii) Title 40 CFR § 63.148(c), (g), (g)(2), (h), and (h)(2) (relating to Leak Inspection Provisions), for monitoring and testing requirements
    - (iii) Title 40 CFR §§ 63.148(g)(2), (h)(2), (i)(1) - (2), (i)(4)(i) - (viii), (i)(5), and 63.152(a)(1) - (5), for recordkeeping requirements
    - (iv) Title 40 CFR §§ 63.148(j), 63.151(a)(6)(i) - (iii), (b)(1) - (2), (j)(1) - (3), 63.152(a)(1) - (5), (b), (b)(1)(i) - (ii), and (b)(4), for reporting requirements
  - B. For closed vent system or vapor collection systems constructed of hard piping:
    - (i) Title 40 CFR § 63.148(b)(1)(ii) (relating to Leak Inspection Provisions), for monitoring and testing requirements

- (ii) Title 40 CFR § 63.148(i)(6) (relating to Leak Inspection Provisions), for recordkeeping requirements
- 15. For the chemical manufacturing facilities subject to wastewater operations requirements in 40 CFR Part 63, Subpart G, the permit holder shall comply with the following requirements (Title 30 TAC Chapter 113, Subchapter C, § 113.120 incorporated by reference):
  - A. Title 40 CFR § 63.135(a) - (f) (relating to Process Wastewater Provisions - Containers)
- 16. The permit holder shall comply with certified registrations submitted to the TCEQ for purposes of establishing federally enforceable emission limits. A copy of the certified registration shall be maintained with the permit. Records sufficient to demonstrate compliance with the established limits shall be maintained. The certified registration and records demonstrating compliance shall be provided, on request, to representatives of the appropriate TCEQ regional office and any local air pollution control agency having jurisdiction over the site. The permit holder shall submit updated certified registrations when changes at the site require establishment of new emission limits. If changes result in emissions that do not remain below major source thresholds, the permit holder shall submit a revision application to codify the appropriate requirements in the permit.

#### **Additional Monitoring Requirements**

- 17. Unless otherwise specified, the permit holder shall comply with the compliance assurance monitoring requirements as specified in the attached "CAM Summary" upon issuance of the permit. In addition, the permit holder shall comply with the following:
  - A. The permit holder shall comply with the terms and conditions contained in 30 TAC § 122.147 (General Terms and Conditions for Compliance Assurance Monitoring).
  - B. The permit holder shall report, consistent with the averaging time identified in the "CAM Summary," deviations as defined by the deviation limit in the "CAM Summary." Any monitoring data below a minimum limit or above a maximum limit, that is collected in accordance with the requirements specified in 40 CFR § 64.7(c), shall be reported as a deviation. Deviations shall be reported according to 30 TAC § 122.145 (Reporting Terms and Conditions).
  - C. The permit holder may elect to collect monitoring data on a more frequent basis and average the data, consistent with the averaging time or minimum frequency specified in the "CAM Summary," for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis. In no event shall data be collected and used in particular instances in order to avoid reporting deviations. All monitoring data shall be collected in accordance with the requirements specified in 40 CFR § 64.7(c).
  - D. The permit holder shall operate the monitoring, identified in the attached "CAM Summary," in accordance with the provisions of 40 CFR § 64.7.
  - E. The permit holder shall comply with the requirements of 40 CFR § 70.6(a)(3)(ii)(A) and 30 TAC § 122.144(1)(A)-(F) for documentation of all required inspections.
- 18. The permit holder shall comply with the periodic monitoring requirements as specified in the attached "Periodic Monitoring Summary" upon issuance of the permit. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the permit

holder shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. The permit holder may elect to collect monitoring data on a more frequent basis and average the data, consistent with the averaging time or minimum frequency specified in the "Periodic Monitoring Summary," for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis. In no event shall data be collected and used in particular instances to avoid reporting deviations. Deviations shall be reported according to 30 TAC § 122.145 (Reporting Terms and Conditions).

#### **New Source Review Authorization Requirements**

19. Permit holder shall comply with the requirements of New Source Review authorizations issued or claimed by the permit holder for the permitted area, including permits, permits by rule, standard permits, flexible permits, special permits, permits for existing facilities including Voluntary Emissions Reduction Permits and Electric Generating Facility Permits issued under 30 TAC Chapter 116, Subchapter I, or special exemptions referenced in the New Source Review Authorization References attachment. These requirements:
  - A. Are incorporated by reference into this permit as applicable requirements
  - B. Shall be located with this operating permit
  - C. Are not eligible for a permit shield
20. The permit holder shall comply with the general requirements of 30 TAC Chapter 106, Subchapter A or the general requirements, if any, in effect at the time of the claim of any PBR.
21. The permit holder shall maintain records to demonstrate compliance with any emission limitation or standard that is specified in a permit by rule (PBR) or Standard Permit listed in the New Source Review Authorizations attachment. The records shall yield reliable data from the relevant time period that are representative of the emission unit's compliance with the PBR or Standard Permit. These records may include, but are not limited to, production capacity and throughput, hours of operation, safety data sheets (SDS), chemical composition of raw materials, speciation of air contaminant data, engineering calculations, maintenance records, fugitive data, performance tests, capture/control device efficiencies, direct pollutant monitoring (CEMS, COMS, or PEMS), or control device parametric monitoring. These records shall be made readily accessible and available as required by 30 TAC § 122.144. Any monitoring or recordkeeping data indicating noncompliance with the PBR or Standard Permit shall be considered and reported as a deviation according to 30 TAC § 122.145 (Reporting Terms and Conditions).
22. The permit holder shall comply with the terms and conditions of the air addendum of the Industrial Hazardous Waste permits listed in the New Source Review Authorization Reference Attachment. Requirements other than those of the air addendum are not applicable to this operating permit.
23. The permit holder shall comply with the following requirements for Air Quality Standard Permits:
  - A. Registration requirements listed in 30 TAC § 116.611, unless otherwise provided for in an Air Quality Standard Permit
  - B. General Conditions listed in 30 TAC § 116.615, unless otherwise provided for in an Air Quality Standard Permit
  - C. Applicable requirements of 30 TAC § 116.617 for Pollution Control Projects based on the information contained in the registration application.

D. Requirements of the non-rule Air Quality Standard Permit for Pollution Control Projects

**Compliance Requirements**

24. The permit holder shall certify compliance in accordance with 30 TAC § 122.146. The permit holder shall comply with 30 TAC § 122.146 using at a minimum, but not limited to, the continuous or intermittent compliance method data from monitoring, recordkeeping, reporting, or testing required by the permit and any other credible evidence or information. The certification period may not exceed 12 months and the certification must be submitted within 30 days after the end of the period being certified.
25. Permit holder shall comply with the following 30 TAC Chapter 117 requirements:
  - A. The permit holder shall comply with the compliance schedules and submit written notification to the TCEQ Executive Director as required in 30 TAC Chapter 117, Subchapter H, Division 1:
    - (i) For sources in the Houston-Galveston-Brazoria Nonattainment area, 30 TAC § 117.9020:
      - (1) Title 30 TAC § 117.9020(2)(A), (C), and (D)
  - B. The permit holder shall comply with the Initial Control Plan unit listing requirement in 30 TAC § 117.350(c) and (c)(1).
  - C. The permit holder shall comply with the requirements of 30 TAC § 117.354 for Final Control Plan Procedures for Attainment Demonstration Emission Specifications and 30 TAC § 117.356 for Revision of Final Control Plan.
26. Use of Emission Credits to comply with applicable requirements:
  - A. Unless otherwise prohibited, the permit holder may use emission credits to comply with the following applicable requirements listed elsewhere in this permit:
    - (i) Title 30 TAC Chapter 115
    - (ii) Title 30 TAC Chapter 117
    - (iii) Offsets for Title 30 TAC Chapter 116
  - B. The permit holder shall comply with the following requirements in order to use the emission credits to comply with the applicable requirements:
    - (i) The permit holder must notify the TCEQ according to 30 TAC § 101.306(c)-(d)
    - (ii) The emission credits to be used must meet all the geographic, timeliness, applicable pollutant type, and availability requirements listed in 30 TAC Chapter 101, Subchapter H, Division 1
    - (iii) The executive director has approved the use of the credit according to 30 TAC § 101.306(c)-(d)
    - (iv) The permit holder keeps records of the use of credits towards compliance with the applicable requirements in accordance with 30 TAC § 101.302(g) and 30 TAC Chapter 122

- (v) Title 30 TAC § 101.305 (relating to Emission Reductions Achieved Outside the United States)

27. Use of Discrete Emission Credits to comply with the applicable requirements:

- A. Unless otherwise prohibited, the permit holder may use discrete emission credits to comply with the following applicable requirements listed elsewhere in this permit:
  - (i) Title 30 TAC Chapter 115
  - (ii) Title 30 TAC Chapter 117
  - (iii) If applicable, offsets for Title 30 TAC Chapter 116
  - (iv) Temporarily exceed state NSR permit allowables
- B. The permit holder shall comply with the following requirements in order to use the credit to comply with the applicable requirements:
  - (i) The permit holder must notify the TCEQ according to 30 TAC § 101.376(d)
  - (ii) The discrete emission credits to be used must meet all the geographic, timeliness, applicable pollutant type, and availability requirements listed in 30 TAC Chapter 101, Subchapter H, Division 4
  - (iii) The executive director has approved the use of the discrete emission credits according to 30 TAC § 101.376(d)(1)(A)
  - (iv) The permit holder keeps records of the use of credits towards compliance with the applicable requirements in accordance with 30 TAC § 101.372(h) and 30 TAC Chapter 122
  - (v) Title 30 TAC § 101.375 (relating to Emission Reductions Achieved Outside the United States)

**Risk Management Plan**

28. For processes subject to 40 CFR Part 68 and specified in 40 CFR § 68.10, the permit holder shall comply with the requirements of the Accidental Release Prevention Provisions in 40 CFR Part 68. The permit holder shall submit to the appropriate agency either a compliance schedule for meeting the requirements of 40 CFR Part 68 by the date provided in 40 CFR § 68.10(a), or as part of the compliance certification submitted under this permit, a certification statement that the source is in compliance with all requirements of 40 CFR Part 68, including the registration and submission of a risk management plan.

**Permit Location**

29. The permit holder shall maintain a copy of this permit and records related to requirements listed in this permit on site.

**Permit Shield (30 TAC § 122.148)**

30. A permit shield is granted for the emission units, groups, or processes specified in the attached "Permit Shield." Compliance with the conditions of the permit shall be deemed compliance with the specified potentially applicable requirements or specified potentially applicable state-only



requirements listed in the attachment "Permit Shield." Permit shield provisions shall not be modified by the executive director until notification is provided to the permit holder. No later than 90 days after notification of a change in a determination made by the executive director, the permit holder shall apply for the appropriate permit revision to reflect the new determination. Provisional terms are not eligible for this permit shield. Any term or condition, under a permit shield, shall not be protected by the permit shield if it is replaced by a provisional term or condition or the basis of the term and condition changes.

## **Attachments**

**Applicable Requirements Summary**

**Additional Monitoring Requirements**

**Permit Shield**

**New Source Review Authorization References**

### **Applicable Requirements Summary**

<b>Unit Summary .....</b>	<b>18</b>
---------------------------	-----------

<b>Applicable Requirements Summary .....</b>	<b>24</b>
--	-----------

Note: A “none” entry may be noted for some emission sources in this permit’s “Applicable Requirements Summary” under the heading of “Monitoring and Testing Requirements” and/or “Recordkeeping Requirements” and/or “Reporting Requirements.” Such a notation indicates that there are no requirements for the indicated emission source as identified under the respective column heading(s) for the stated portion of the regulation when the emission source is operating under the conditions of the specified SOP Index Number. However, other relevant requirements pursuant to 30 TAC Chapter 122 including Recordkeeping Terms and Conditions (30 TAC § 122.144), Reporting Terms and Conditions (30 TAC § 122.145), and Compliance Certification Terms and Conditions (30 TAC § 122.146) continue to apply.

### Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
101	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	R1111-0001	30 TAC Chapter 111, Visible Emissions	No changing attributes.
117	BOILERS/STEAM GENERATORS/STEAM GENERATING UNITS	N/A	R7ICI-0001	30 TAC Chapter 117, Subchapter B	No changing attributes.
128	PROCESS HEATERS/FURNACES	N/A	R7ICI-0002	30 TAC Chapter 117, Subchapter B	No changing attributes.
48	STORAGE TANKS/VESSELS	N/A	R5112	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
48	STORAGE TANKS/VESSELS	N/A	60Kb-0002B	40 CFR Part 60, Subpart Kb	No changing attributes.
49	STORAGE TANKS/VESSELS	N/A	R5112	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
49	STORAGE TANKS/VESSELS	N/A	60Kb-0002B	40 CFR Part 60, Subpart Kb	No changing attributes.
53	STORAGE TANKS/VESSELS	N/A	R5112	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
53	STORAGE TANKS/VESSELS	N/A	60Kb-0002	40 CFR Part 60, Subpart Kb	No changing attributes.
56	STORAGE TANKS/VESSELS	N/A	R5112	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
78	STORAGE TANKS/VESSELS	N/A	R5112	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
B1	STORAGE TANKS/VESSELS	N/A	R5112-0001	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
B1	STORAGE TANKS/VESSELS	N/A	60Kb-0002	40 CFR Part 60, Subpart Kb	No changing attributes.

### Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
B1	STORAGE TANKS/VESSELS	N/A	61FF-0002	40 CFR Part 61, Subpart FF	No changing attributes.
B2	STORAGE TANKS/VESSELS	N/A	R5112-0001	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
B2	STORAGE TANKS/VESSELS	N/A	60Kb-0002	40 CFR Part 60, Subpart Kb	No changing attributes.
B2	STORAGE TANKS/VESSELS	N/A	61FF-0002	40 CFR Part 61, Subpart FF	No changing attributes.
DIESEL TK	STORAGE TANKS/VESSELS	N/A	R5112-0005	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
DWP1	SRIC ENGINES	N/A	R7ICI-0003	30 TAC Chapter 117, Subchapter B	No changing attributes.
DWP1	SRIC ENGINES	N/A	60IIII-0001	40 CFR Part 60, Subpart IIII	No changing attributes.
DWP1	SRIC ENGINES	N/A	63ZZZZ-0001	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
DWP2	SRIC ENGINES	N/A	R7ICI-0004	30 TAC Chapter 117, Subchapter B	No changing attributes.
DWP2	SRIC ENGINES	N/A	63ZZZZ-0002	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
F2	STORAGE TANKS/VESSELS	N/A	R5112-0004	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
F2	STORAGE TANKS/VESSELS	N/A	61FF-0002	40 CFR Part 61, Subpart FF	No changing attributes.
F2	STORAGE TANKS/VESSELS	N/A	63GT-WW12	40 CFR Part 63, Subpart G	Control Device Type = Boiler or process heater burning hazardous waste
F2	STORAGE TANKS/VESSELS	N/A	63GT-WW4	40 CFR Part 63, Subpart G	MACT Subpart F/G Applicability = The unit is a Group 1 vessel (as defined in Table 5 for

### Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
					<p>existing sources or Table 6 for new sources of 40 CFR 63, Subpart G)., NESHAP Subpart Y Applicability = The unit is not subject to 40 CFR Part 61, Subpart Y., Maximum TVP = Maximum true vapor pressure of the total organic HAP in the liquid is less than 11.11 psi (76.6 kPa), Emission Control Type = Closed vent system (CVS) and control device (fixed roof), Control Device Design = The control device was not installed on or before December 31, 1992 or was not designed to reduce inlet emissions of total organic hazardous air pollutants by greater than or equal to 90% and less than 95%., Control Device Type = Thermal incinerator, Design Evaluation Submitted = Results of a performance test was submitted to demonstrate compliance with 40 CFR § 63.119(e)., Closed Vent System = Closed vent system is routing emissions to a process or fuel gas system, or is subject to § 63.148 of Subpart G., Hard Piping = The closed vent system is constructed of hard piping., Bypass Lines = Closed vent system has no by-pass lines., Compliance with 40 CFR 63.139(c)(1) = The enclosed combustion device being used meets the 0.5 second residence time at 760° C provisions specified in 40 CFR § 63.139(c)(1)(iii), Performance Test = Performance tests are not conducted using the methods and procedures specified in § 63.145(i)., Monitoring Options = Control device is using the monitoring parameters specified in Table 13 of Subpart G., Continuous Monitoring = Complying with the</p>

### Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
					continuous monitoring requirements of § 63.143(e)(1) or § 63.143(e)(2) in Table 13., Control Device Type = Thermal vapor incinerator
F3	STORAGE TANKS/VESSELS	N/A	R5112-0001	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
F3	STORAGE TANKS/VESSELS	N/A	61FF-0002	40 CFR Part 61, Subpart FF	No changing attributes.
F3	STORAGE TANKS/VESSELS	N/A	63GT-WW12	40 CFR Part 63, Subpart G	Control Device Type = Boiler or process heater burning hazardous waste
F3	STORAGE TANKS/VESSELS	N/A	63GT-WW4	40 CFR Part 63, Subpart G	MACT Subpart F/G Applicability = The unit is a Group 1 vessel (as defined in Table 5 for existing sources or Table 6 for new sources of 40 CFR 63, Subpart G)., NESHAP Subpart Y Applicability = The unit is not subject to 40 CFR Part 61, Subpart Y., Maximum TVP = Maximum true vapor pressure of the total organic HAP in the liquid is less than 11.11 psi (76.6 kPa), Emission Control Type = Closed vent system (CVS) and control device (fixed roof), Control Device Design = The control device was not installed on or before December 31, 1992 or was not designed to reduce inlet emissions of total organic hazardous air pollutants by greater than or equal to 90% and less than 95%., Control Device Type = Thermal incinerator, Design Evaluation Submitted = Results of a performance test was submitted to demonstrate compliance with 40 CFR § 63.119(e)., Closed Vent System = Closed vent system is routing emissions to a process or fuel gas system, or is subject to § 63.148

### Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
					of Subpart G., Hard Piping = The closed vent system is constructed of hard piping., Bypass Lines = Closed vent system has no by-pass lines., Compliance with 40 CFR 63.139(c)(1) = The enclosed combustion device being used meets the 0.5 second residence time at 760° C provisions specified in 40 CFR § 63.139(c)(1)(iii), Performance Test = Performance tests are not conducted using the methods and procedures specified in § 63.145(i)., Monitoring Options = Control device is using the monitoring parameters specified in Table 13 of Subpart G., Continuous Monitoring = Complying with the continuous monitoring requirements of § 63.143(e)(1) or § 63.143(e)(2) in Table 13., Control Device Type = Thermal vapor incinerator
H1	STORAGE TANKS/VESSELS	N/A	R5112-0002	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
H1	STORAGE TANKS/VESSELS	N/A	61FF-0002	40 CFR Part 61, Subpart FF	No changing attributes.
H1	STORAGE TANKS/VESSELS	N/A	63GGG-2	40 CFR Part 63, Subpart GGG	No changing attributes.
H2	STORAGE TANKS/VESSELS	N/A	R5112-0002	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
H2	STORAGE TANKS/VESSELS	N/A	61FF-0002	40 CFR Part 61, Subpart FF	No changing attributes.
H2	STORAGE TANKS/VESSELS	N/A	63GGG-2	40 CFR Part 63, Subpart GGG	No changing attributes.
LOAD-1	LOADING/UNLOADING	N/A	R5211-0002	30 TAC Chapter 115,	True Vapor Pressure = True vapor pressure



### Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
	OPERATIONS			Loading and Unloading of VOC	greater than or equal to 0.5 psia., Daily Throughput = Loading less than 20,000 gallons per day., Transfer Type = Only loading.
LOAD-1	LOADING/UNLOADING OPERATIONS	N/A	R5211-001	30 TAC Chapter 115, Loading and Unloading of VOC	True Vapor Pressure = True vapor pressure less than 0.5 psia., Transfer Type = Loading and unloading.
PAINT	SURFACE COATING OPERATIONS	N/A	R5451-0001	30 TAC Chapter 115, Subchapter E, Division 5	No changing attributes.
PRO-REGEN2	SULFURIC ACID PRODUCTION	N/A	REG2-0002	30 TAC Chapter 112, Sulfur Compounds	No changing attributes.
PRO-REGEN2	SULFURIC ACID PRODUCTION	N/A	60H-001	40 CFR Part 60, Subpart H	No changing attributes.
PRO-REGEN2	TREATMENT PROCESS	N/A	61FF-0001	40 CFR Part 61, Subpart FF	No changing attributes.
PRO-REGEN2	TREATMENT PROCESS	N/A	63GTP-WW19	40 CFR Part 63, Subpart G	No changing attributes.
PRO-REGEN2	TREATMENT PROCESS	N/A	63GGG-1	40 CFR Part 63, Subpart GGG	No changing attributes.
PRO-UNIT8	SULFURIC ACID PRODUCTION	N/A	REG2-0001	30 TAC Chapter 112, Sulfur Compounds	No changing attributes.
PRO-UNIT8	SULFURIC ACID PRODUCTION	N/A	60H-001	40 CFR Part 60, Subpart H	No changing attributes.

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
101	EP	R1111-0001	Opacity	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(1)(C) § 111.111(a)(1)(E)	Visible emissions from any stationary vent shall not exceed an opacity of 15% averaged over a six minute period for any source with a total flow rate of at least 100,000 acfm unless a CEMS is installed.	[G]§ 111.111(a)(1)(F) ** See Periodic Monitoring Summary	None	None
117	EU	R7ICI-0001	NO <sub>x</sub>	30 TAC Chapter 117, Subchapter B	§ 117.310(d)(3) § 117.310(a) § 117.310(a)(1)(A) § 117.310(b) [G]§ 117.310(e)(1) § 117.310(e)(2) [G]§ 117.310(e)(3) § 117.310(e)(4) § 117.340(f)(1) § 117.340(l)(2) § 117.340(p)(1) § 117.340(p)(3)	An owner or operator may not use the alternative methods specified in §§ 117.315, 117.323 and 117.9800 to comply with the NO <sub>x</sub> emission specifications but shall use the mass emissions cap and trade program in Chapter 101, Subchapter H, Division 3, except that electric generating facilities must also comply with the daily and 30-day system cap emission limitations of § 117.320. An owner or operator may use the alternative methods specified in § 117.9800 to comply with § 117.320.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(c) § 117.335(d) § 117.335(f) § 117.335(f)(2) § 117.335(g) § 117.340(a) § 117.340(b)(1) § 117.340(b)(3) § 117.340(c)(1) [G]§ 117.340(c)(3) [G]§ 117.340(f)(2) § 117.340(l)(2) § 117.340(o)(1) § 117.340(p)(1) § 117.8100(a) § 117.8100(a)(1) § 117.8100(a)(1)(A) § 117.8100(a)(1)(B) § 117.8100(a)(1)(B)(i) § 117.8100(a)(1)(B)(ii) § 117.8100(a)(1)(C) § 117.8100(a)(2) [G]§ 117.8100(a)(3) § 117.8100(a)(4) § 117.8100(a)(5) § 117.8100(a)(5)(A) § 117.8100(a)(5)(B) [G]§ 117.8100(a)(5)(D)	§ 117.345(a) § 117.345(f) § 117.345(f)(1) [G]§ 117.345(f)(2) § 117.345(f)(8) § 117.345(f)(9) § 117.8100(a)(5)(C)	§ 117.335(b) § 117.335(g) [G]§ 117.345(b) [G]§ 117.345(c) § 117.345(d) § 117.345(d)(3) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) § 117.8010(2)(C) § 117.8010(2)(D) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7) [G]§ 117.8010(8) § 117.8100(c)

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
							[G]§ 117.8100(a)(5)(E) § 117.8100(a)(6)		
117	EU	R7ICI-0001	CO	30 TAC Chapter 117, Subchapter B	§ 117.310(c)(1) § 117.310(c)(1)(B) § 117.310(c)(3) § 117.8120	CO emissions must not exceed 400 ppmv at 3.0% O <sub>2</sub> , dry basis.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a) § 117.340(b)(1) § 117.340(b)(3) § 117.340(e) § 117.8000(b) § 117.8000(c) § 117.8000(c)(2) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d) § 117.8120(2) [G]§ 117.8120(2)(A) § 117.8120(2)(B)	§ 117.345(a) § 117.345(f) § 117.345(f)(1) § 117.345(f)(7) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7) [G]§ 117.8010(8)
117	EU	R7ICI-0001	NH <sub>3</sub>	30 TAC Chapter 117, Subchapter B	§ 117.310(c)(2) § 117.310(c)(2)(A)	For boilers that inject urea or ammonia into the exhaust stream for NO <sub>x</sub> control, ammonia emissions must not exceed 10 ppmv at 3.0% O <sub>2</sub> , dry.	§ 117.335(a)(2) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(b)(1) § 117.340(b)(3) § 117.340(d) § 117.8000(b) § 117.8000(c) § 117.8000(c)(3) § 117.8000(c)(4) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d)	§ 117.345(a) § 117.345(f) § 117.345(f)(11) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7) [G]§ 117.8010(8)

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
							§ 117.8130 § 117.8130(2)		
128	EU	R7ICI-0002	NO <sub>x</sub>	30 TAC Chapter 117, Subchapter B	§ 117.310(d)(3) § 117.310(a) § 117.310(a)(8)(A)(ii) § 117.310(b) [G]§ 117.310(e)(1) § 117.310(e)(2) [G]§ 117.310(e)(3) § 117.310(e)(4) § 117.340(l)(2) § 117.340(p)(1) § 117.340(p)(2)(C) § 117.340(p)(3)	An owner or operator may not use the alternative methods specified in §§ 117.315, 117.323 and 117.9800 to comply with the NO <sub>x</sub> emission specifications but shall use the mass emissions cap and trade program in Chapter 101, Subchapter H, Division 3, except that electric generating facilities must also comply with the daily and 30-day system cap emission limitations of § 117.320. An owner or operator may use the alternative methods specified in § 117.9800 to comply with § 117.320.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a) § 117.340(l)(2) § 117.340(o)(1) § 117.340(p)(1) § 117.340(p)(2)(A) § 117.340(p)(2)(B) § 117.340(p)(2)(C) § 117.8000(b) § 117.8000(c) § 117.8000(c)(1) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d)	§ 117.345(a) § 117.345(f) § 117.345(f)(1) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) § 117.340(p)(2)(D) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) § 117.8010(2)(C) § 117.8010(2)(D) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7) [G]§ 117.8010(8)
128	EU	R7ICI-0002	CO	30 TAC Chapter 117, Subchapter B	§ 117.310(c)(1) § 117.310(c)(1)(B) § 117.310(c)(3)	CO emissions must not exceed 400 ppmv at 3.0% O <sub>2</sub> , dry basis.	[G]§ 117.335(a)(1) § 117.335(a)(4) § 117.335(b) § 117.335(d) § 117.335(e) § 117.335(g) § 117.340(a) § 117.8000(b) § 117.8000(c) § 117.8000(c)(2) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d) § 117.8120 § 117.8120(2)	§ 117.345(a) § 117.345(f) § 117.345(f)(1) § 117.345(f)(9)	§ 117.335(b) § 117.335(g) [G]§ 117.345(b) [G]§ 117.345(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7) [G]§ 117.8010(8)

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
							[G]§ 117.8120(2)(A) § 117.8120(2)(B)		
48	EU	R5112	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(e)(1) § 115.112(e)(3) § 115.112(e)(3)(A) § 115.112(e)(3)(A)(i) § 115.112(e)(3)(A)(ii)	No person shall place, store, or hold VOC in any storage tank unless the storage tank is capable of maintaining working pressure sufficient at all times to prevent any vapor or gas loss to the atmosphere or is in compliance with the control requirements specified in Table 1 of this paragraph for VOC other than crude oil and condensate or Table 2 of subsection (a)(1) of this paragraph for crude oil and condensate.	§ 115.115(a) § 115.115(a)(1) § 115.116(a)(1) [G]§ 115.117	§ 115.118(a)(4) § 115.118(a)(4)(A) § 115.118(a)(5) § 115.118(a)(7)	None
48	EU	60Kb-0002B	VOC	40 CFR Part 60, Subpart Kb	[G]§ 60.112b(a)(3)	Storage vessels specified in §60.112b(a) and equipped with a closed vent system/control device are to meet the specifications of §60.112b(a)(3)(i)-(ii).	[G]§ 60.113b(c)(1) § 60.113b(c)(2) § 60.116b(a) § 60.116b(b) § 60.116b(e) § 60.116b(e)(1) [G]§ 60.116b(e)(3) [G]§ 60.485(b) ** See Periodic Monitoring Summary	§ 60.115b [G]§ 60.115b(c) § 60.116b(a) § 60.116b(b)	[G]§ 60.113b(c)(1) § 60.115b
49	EU	R5112	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(e)(1) § 115.112(e)(3) § 115.112(e)(3)(A) § 115.112(e)(3)(A)(i) § 115.112(e)(3)(A)(ii)	No person shall place, store, or hold VOC in any storage tank unless the storage tank is capable of maintaining working pressure sufficient at all times to prevent any vapor or gas loss to the atmosphere or is in compliance with the control requirements specified in	§ 115.115(a) § 115.115(a)(1) § 115.116(a)(1) [G]§ 115.117	§ 115.118(a)(4) § 115.118(a)(4)(A) § 115.118(a)(5) § 115.118(a)(7)	None

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						Table 1 of this paragraph for VOC other than crude oil and condensate or Table 2 of subsection (a)(1) of this paragraph for crude oil and condensate.			
49	EU	60Kb-0002B	VOC	40 CFR Part 60, Subpart Kb	[G]§ 60.112b(a)(3)	Storage vessels specified in §60.112b(a) and equipped with a closed vent system/control device are to meet the specifications of §60.112b(a)(3)(i)-(ii).	[G]§ 60.113b(c)(1) § 60.113b(c)(2) § 60.116b(a) § 60.116b(b) § 60.116b(e) § 60.116b(e)(1) [G]§ 60.116b(e)(3) [G]§ 60.485(b) ** See Periodic Monitoring Summary	§ 60.115b [G]§ 60.115b(c) § 60.116b(a) § 60.116b(b)	[G]§ 60.113b(c)(1) § 60.115b
53	EU	R5112	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(e)(1) § 115.112(e)(3) § 115.112(e)(3)(A) § 115.112(e)(3)(A)(i) § 115.112(e)(3)(A)(ii)	No person shall place, store, or hold VOC in any storage tank unless the storage tank is capable of maintaining working pressure sufficient at all times to prevent any vapor or gas loss to the atmosphere or is in compliance with the control requirements specified in Table 1 of this paragraph for VOC other than crude oil and condensate or Table 2 of subsection (a)(1) of this paragraph for crude oil and condensate.	§ 115.115(a) § 115.115(a)(1) § 115.116(a)(1) [G]§ 115.117	§ 115.118(a)(4) § 115.118(a)(4)(A) § 115.118(a)(5) § 115.118(a)(7)	None
53	EU	60Kb-0002	VOC	40 CFR Part 60, Subpart Kb	[G]§ 60.112b(a)(3)	Storage vessels specified in §60.112b(a) and equipped with a closed vent system/control device are to meet the specifications of §60.112b(a)(3)(i)-(ii).	[G]§ 60.113b(c)(1) § 60.113b(c)(2) § 60.116b(a) § 60.116b(b) § 60.116b(e) § 60.116b(e)(1)	§ 60.115b [G]§ 60.115b(c) § 60.116b(a) § 60.116b(b)	[G]§ 60.113b(c)(1) § 60.115b

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
							[G]§ 60.116b(e)(3) [G]§ 60.485(b) ** See Periodic Monitoring Summary		
56	EU	R5112	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(e)(1) § 115.112(e)(3) § 115.112(e)(3)(A) § 115.112(e)(3)(A)(i) § 115.112(e)(3)(A)(ii)	No person shall place, store, or hold VOC in any storage tank unless the storage tank is capable of maintaining working pressure sufficient at all times to prevent any vapor or gas loss to the atmosphere or is in compliance with the control requirements specified in Table 1 of this paragraph for VOC other than crude oil and condensate or Table 2 of subsection (a)(1) of this paragraph for crude oil and condensate.	§ 115.115(a) § 115.115(a)(1) § 115.116(a)(1) [G]§ 115.117	§ 115.118(a)(4) § 115.118(a)(4)(A) § 115.118(a)(5) § 115.118(a)(7)	None
78	EU	R5112	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(e)(1) § 115.112(e)(3) § 115.112(e)(3)(A) § 115.112(e)(3)(A)(i) § 115.112(e)(3)(A)(ii)	No person shall place, store, or hold VOC in any storage tank unless the storage tank is capable of maintaining working pressure sufficient at all times to prevent any vapor or gas loss to the atmosphere or is in compliance with the control requirements specified in Table 1 of this paragraph for VOC other than crude oil and condensate or Table 2 of subsection (a)(1) of this paragraph for crude oil and condensate.	§ 115.115(a) § 115.115(a)(1) § 115.116(a)(1) [G]§ 115.117	§ 115.118(a)(4) § 115.118(a)(4)(A) § 115.118(a)(5) § 115.118(a)(7)	None
B1	EU	R5112-0001	VOC	30 TAC Chapter 115, Storage of	§ 115.112(e)(1) § 115.112(e)(3)	No person shall place, store, or hold VOC in any storage	§ 115.115(a) § 115.115(a)(1)	§ 115.118(a)(4) § 115.118(a)(4)(A)	None

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
				VOCs	§ 115.112(e)(3)(A) § 115.112(e)(3)(A)(i) § 115.112(e)(3)(A)(ii)	tank unless the storage tank is capable of maintaining working pressure sufficient at all times to prevent any vapor or gas loss to the atmosphere or is in compliance with the control requirements specified in Table 1 of this paragraph for VOC other than crude oil and condensate or Table 2 of subsection (a)(1) of this paragraph for crude oil and condensate.	§ 115.116(a)(1) [G]§ 115.117	§ 115.118(a)(5) § 115.118(a)(7)	
B1	EU	60Kb-0002	VOC	40 CFR Part 60, Subpart Kb	[G]§ 60.112b(a)(3)	Storage vessels specified in §60.112b(a) and equipped with a closed vent system/control device are to meet the specifications of §60.112b(a)(3)(i)-(ii).	[G]§ 60.113b(c)(1) § 60.113b(c)(2) § 60.116b(a) § 60.116b(b) § 60.116b(e) § 60.116b(e)(1) [G]§ 60.116b(e)(3) § 60.116b(f)(1) [G]§ 60.485(b) ** See Periodic Monitoring Summary	§ 60.115b [G]§ 60.115b(c) § 60.116b(a) § 60.116b(b)	[G]§ 60.113b(c)(1) § 60.115b
B1	EU	61FF-0002	Benzene	40 CFR Part 61, Subpart FF	§ 61.343(a)(1) § 61.343(a)(1)(i)(A) § 61.343(a)(1)(i)(B) § 61.343(c) § 61.343(d) § 61.349(a) § 61.349(a)(1)(i) § 61.349(a)(1)(iii) § 61.349(a)(1)(iv) § 61.349(a)(2)(i)(C) § 61.349(b) § 61.349(e) § 61.349(f)	The owner or operator shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the tank to a control device.	§ 61.343(a)(1)(i)(A) § 61.343(c) § 61.349(a)(1)(i) § 61.349(e) § 61.349(f) § 61.354(c) § 61.354(c)(1) [G]§ 61.355(h)	§ 61.354(c) § 61.354(c)(1) § 61.356(d) § 61.356(f) § 61.356(f)(1) § 61.356(f)(2) § 61.356(f)(2)(i) § 61.356(f)(2)(i)(A) § 61.356(g) § 61.356(h) § 61.356(j) § 61.356(j)(1) § 61.356(j)(2)	§ 61.357(d)(7) § 61.357(d)(7)(iv) § 61.357(d)(7)(iv)(A)



### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 61.349(g)			§ 61.356(j)(3) § 61.356(j)(4)	
B2	EU	R5112-0001	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(e)(1) § 115.112(e)(3) § 115.112(e)(3)(A) § 115.112(e)(3)(A)(i) § 115.112(e)(3)(A)(ii)	No person shall place, store, or hold VOC in any storage tank unless the storage tank is capable of maintaining working pressure sufficient at all times to prevent any vapor or gas loss to the atmosphere or is in compliance with the control requirements specified in Table 1 of this paragraph for VOC other than crude oil and condensate or Table 2 of subsection (a)(1) of this paragraph for crude oil and condensate.	§ 115.115(a) § 115.115(a)(1) § 115.116(a)(1) [G]§ 115.117	§ 115.118(a)(4) § 115.118(a)(4)(A) § 115.118(a)(5) § 115.118(a)(7)	None
B2	EU	60Kb-0002	VOC	40 CFR Part 60, Subpart Kb	[G]§ 60.112b(a)(3)	Storage vessels specified in §60.112b(a) and equipped with a closed vent system/control device are to meet the specifications of §60.112b(a)(3)(i)-(ii).	[G]§ 60.113b(c)(1) § 60.113b(c)(2) § 60.116b(a) § 60.116b(b) § 60.116b(e) § 60.116b(e)(1) [G]§ 60.116b(e)(3) § 60.116b(f)(1) [G]§ 60.485(b) ** See Periodic Monitoring Summary	§ 60.115b [G]§ 60.115b(c) § 60.116b(a) § 60.116b(b)	[G]§ 60.113b(c)(1) § 60.115b
B2	EU	61FF-0002	Benzene	40 CFR Part 61, Subpart FF	§ 61.343(a)(1) § 61.343(a)(1)(i)(A) § 61.343(a)(1)(i)(B) § 61.343(c) § 61.343(d) § 61.349(a) § 61.349(a)(1)(i) § 61.349(a)(1)(iii) § 61.349(a)(1)(iv)	The owner or operator shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the tank to a control device.	§ 61.343(a)(1)(i)(A) § 61.343(c) § 61.349(a)(1)(i) § 61.349(e) § 61.349(f) § 61.354(c) § 61.354(c)(1) [G]§ 61.355(h)	§ 61.354(c) § 61.354(c)(1) § 61.356(d) § 61.356(f) § 61.356(f)(1) § 61.356(f)(2) § 61.356(f)(2)(i) § 61.356(f)(2)(i)(A) § 61.356(g)	§ 61.357(d)(7) § 61.357(d)(7)(iv) § 61.357(d)(7)(iv)(A)

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 61.349(a)(2)(i)(C) § 61.349(b) § 61.349(e) § 61.349(f) § 61.349(g)			§ 61.356(h) § 61.356(j) § 61.356(j)(1) § 61.356(j)(2) § 61.356(j)(3) § 61.356(j)(4)	
DIESEL TK	EU	R5112-0005	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.111(a)(1)	Except as provided in § 115.118, a storage tank storing VOC with a true vapor pressure less than 1.5 psia is exempt from the requirements of this division.	[G]§ 115.117	§ 115.118(a)(1) § 115.118(a)(5) § 115.118(a)(7)	None
DWP1	EU	R7ICI-0003	Exempt	30 TAC Chapter 117, Subchapter B	[G]§ 117.303(a)(11) [G]§ 117.310(f)	Units exempted from the provisions of this division except as specified in §§117.310(f), 117.340(j), 117.345(f)(6) and (10), 117.350(c)(1) and 117.354(a)(5) include new, modified, reconstructed, or relocated stationary diesel engine placed into service on or after October 1, 2001, that operates less than 100 hours per year, based on a rolling 12-month average, in other than emergency situations; and meets the requirements for non-road engines as specified. §117.303(a)(11)(A)-(B)	None	§ 117.340(j) [G]§ 117.345(f)(10) [G]§ 117.345(f)(6)	None
DWP1	EU	60III-0001	CO	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 37 KW and less than 130 KW and a	None	None	None

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 60.4218 § 89.112(a)	displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with a CO emission limit of 5.0 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).			
DWP1	EU	60III-0001	NMHC and NO <sub>x</sub>	40 CFR Part 60, Subpart III	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 37 KW and less than 75 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year must comply with an NMHC+NO <sub>x</sub> emission limit of 7.5 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).	None	None	None
DWP1	EU	60III-0001	PM (Opacity)	40 CFR Part 60, Subpart III	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.113(a)(1) § 89.113(a)(2) § 89.113(a)(3)	Emergency stationary CI ICE, that are not fire pump engines, with displacement < 10 lpc and not constant-speed engines, with max engine power < 2237 KW and a 2007 model year and later or max engine power > 2237 KW and a 2011 model year and later, must comply with following opacity emission limits: 20% during acceleration, 15% during lugging, 50% during peaks in either acceleration or	None	None	None

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						ugging modes as stated in §60.4202(a)(1)-(2), (b)(2) and §89.113(a)(1)-(3) and §1039.105(b)(1)-(3).			
DWP1	EU	63ZZZZ-0001	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)	Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines as applicable. No further requirements apply for such engines under this part.	None	None	None
DWP2	EU	R7ICI-0004	Exempt	30 TAC Chapter 117, Subchapter B	§ 117.303(a)(6)(D) [G]§ 117.310(f)	Units exempted from the provisions of this division, except as specified in §§117.310(f), 117.340(j), 117.345(f)(6) and (10), 117.350(c)(1), and 117.354(a)(5), include stationary gas turbines and stationary internal combustion engines that are used exclusively in emergency situations, except that operation for testing or maintenance purposes is allowed for up to 52 hours per year, based on a rolling 12-month average.	None	§ 117.340(j) [G]§ 117.345(f)(10) [G]§ 117.345(f)(6)	None
DWP2	EU	63ZZZZ-0002	112(B)	40 CFR Part 63,	§ 63.6603(a)-	For each existing	§ 63.6625(f)	§ 63.6625(i)	§ 63.6640(e)

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
			HAPS	Subpart ZZZZ	Table 2d.4 § 63.6595(a)(1) § 63.6605(a) § 63.6605(b) § 63.6625(e) § 63.6625(h) § 63.6625(i) § 63.6640(f)(1) § 63.6640(f)(2) § 63.6640(f)(2)(i) § 63.6640(f)(4) § 63.6640(f)(4)(i)	emergency stationary CI RICE and black start stationary CI RICE, located at an area source, you must comply with the requirements as specified in Table 2d.4.a-c.	§ 63.6625(i) § 63.6640(a) § 63.6640(a)-Table 6.9.a.i § 63.6640(a)-Table 6.9.a.ii	§ 63.6655(d) § 63.6655(e) § 63.6655(f) § 63.6660(a) § 63.6660(b) § 63.6660(c)	§ 63.6650(f)
F2	EU	R5112-0004	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(e)(1) § 115.112(e)(3) § 115.112(e)(3)(A) § 115.112(e)(3)(A)(i) § 115.112(e)(3)(A)(ii)	No person shall place, store, or hold VOC in any storage tank unless the storage tank is capable of maintaining working pressure sufficient at all times to prevent any vapor or gas loss to the atmosphere or is in compliance with the control requirements specified in Table 1 of this paragraph for VOC other than crude oil and condensate or Table 2 of subsection (a)(1) of this paragraph for crude oil and condensate.	§ 115.115(a) § 115.115(a)(1) § 115.116(a)(1) [G] § 115.117	§ 115.118(a)(4) § 115.118(a)(4)(A) § 115.118(a)(5) § 115.118(a)(7)	None
F2	EU	61FF-0002	Benzene	40 CFR Part 61, Subpart FF	§ 61.343(a)(1) § 61.343(a)(1)(i)(A) § 61.343(a)(1)(i)(B) § 61.343(c) § 61.343(d) § 61.349(a) § 61.349(a)(1)(i) § 61.349(a)(1)(iii) § 61.349(a)(1)(iv) § 61.349(a)(2)(i)(C)	The owner or operator shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the tank to a control device.	§ 61.343(a)(1)(i)(A) § 61.343(c) § 61.349(a)(1)(i) § 61.349(e) § 61.349(f) § 61.354(c) § 61.354(c)(1) [G] § 61.355(h)	§ 61.354(c) § 61.354(c)(1) § 61.356(d) § 61.356(f) § 61.356(f)(1) § 61.356(f)(2) § 61.356(f)(2)(i) § 61.356(f)(2)(i)(A) § 61.356(g) § 61.356(h)	§ 61.357(d)(7) § 61.357(d)(7)(iv) § 61.357(d)(7)(iv)(A)

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 61.349(b) § 61.349(e) § 61.349(f) § 61.349(g)			§ 61.356(j) § 61.356(j)(1) § 61.356(j)(2) § 61.356(j)(3) § 61.356(j)(4)	
F2	EU	63GT-WW12	112(B) HAPS	40 CFR Part 63, Subpart G	§ 63.133(a)(2)(i) § 63.132(a)(2)(i)(A) § 63.132(a)(2)(i)(B) [G]§ 63.132(f) § 63.133(b)(1)(ii) § 63.133(f) § 63.133(h) § 63.139(b) § 63.139(d)(4)(iii) § 63.139(f) § 63.140(a) § 63.140(b) § 63.140(c) § 63.144(a) [G]§ 63.148(d) § 63.148(e)	A fixed roof and a closed-vent system that routes the organic hazardous air pollutants vapors vented from the wastewater tank to a control device.	§ 63.133(f) § 63.133(g) § 63.133(g)(3) § 63.143(a) § 63.148(b)(1)(ii) § 63.148(b)(2)(iii) § 63.148(b)(3) [G]§ 63.148(c) § 63.148(g) § 63.148(g)(2) § 63.148(h) § 63.148(h)(2)	§ 63.133(h) § 63.147(b) § 63.147(b)(1) § 63.147(b)(2) § 63.147(b)(6) § 63.148(g)(2) § 63.148(h)(2) § 63.148(i)(1) § 63.148(i)(2) [G]§ 63.148(i)(4) § 63.148(i)(5) § 63.148(i)(6) [G]§ 63.152(a)	§ 63.146(b)(2) § 63.146(b)(5) § 63.146(b)(6) § 63.146(c) § 63.146(g) § 63.148(j) § 63.148(j)(1) [G]§ 63.151(b) § 63.151(e) § 63.151(e)(1) § 63.151(e)(2) § 63.151(e)(3) [G]§ 63.151(j) [G]§ 63.152(a) § 63.152(b) [G]§ 63.152(b)(1) [G]§ 63.152(b)(2) § 63.152(b)(4) § 63.152(c)(1) § 63.152(c)(3) § 63.152(c)(3)(i) § 63.152(c)(3)(ii) § 63.152(c)(4)(ii) [G]§ 63.152(c)(6)
F2	EU	63GT-WW4	112(B) HAPS	40 CFR Part 63, Subpart G	§ 63.133(a)(2)(i) § 63.132(a)(2)(i)(A) § 63.132(a)(2)(i)(B) [G]§ 63.132(f) § 63.133(b)(1)(ii) § 63.133(f) § 63.133(h) § 63.139(b) § 63.139(c)(1)	A fixed roof and a closed-vent system that routes the organic hazardous air pollutants vapors vented from the wastewater tank to a control device.	§ 63.133(f) § 63.133(g) § 63.133(g)(3) § 63.139(d)(2)(i) § 63.139(e) § 63.143(a) § 63.143(e) § 63.143(e)(1) § 63.143(f)	§ 63.133(h) § 63.147(b) § 63.147(b)(1) § 63.147(b)(6) § 63.148(g)(2) § 63.148(h)(2) § 63.148(i)(1) § 63.148(i)(2) [G]§ 63.148(i)(4)	§ 63.146(b)(2) § 63.146(b)(5) § 63.146(b)(6) § 63.146(c) § 63.146(e) § 63.146(e)(1) § 63.146(g) § 63.148(j) § 63.148(j)(1)

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements  (30 TAC § 122.144)	Reporting Requirements  (30 TAC § 122.145)
					§ 63.139(c)(1)(iii) § 63.139(f) § 63.140(a) § 63.140(b) § 63.140(c) § 63.144(a) [G]§ 63.148(d) § 63.148(e)		§ 63.143(g) § 63.148(b)(1)(ii) § 63.148(b)(2)(iii) § 63.148(b)(3) [G]§ 63.148(c) § 63.148(g) § 63.148(g)(2) § 63.148(h) § 63.148(h)(2)	§ 63.148(i)(5) § 63.148(i)(6) [G]§ 63.152(a)	[G]§ 63.151(b) § 63.151(e) § 63.151(e)(1) § 63.151(e)(2) § 63.151(e)(3) [G]§ 63.151(g) § 63.151(h) [G]§ 63.151(j) [G]§ 63.152(a) § 63.152(b) [G]§ 63.152(b)(1) [G]§ 63.152(b)(2) § 63.152(b)(4) § 63.152(c)(1) § 63.152(c)(2) § 63.152(c)(2)(i) [G]§ 63.152(c)(2)(ii) § 63.152(c)(2)(iii) § 63.152(c)(2)(iv) § 63.152(c)(3) § 63.152(c)(3)(i) § 63.152(c)(3)(ii) § 63.152(c)(4)(ii) [G]§ 63.152(c)(6)
F2	EU	63GT-WW4	112(B) HAPS	40 CFR Part 63, Subpart G	§ 63.119(e) § 63.119(a)(1) § 63.119(e)(1) § 63.119(e)(3) § 63.119(e)(4) § 63.119(e)(5) [G]§ 63.148(d) § 63.148(e)	The owner or operator who elects to use a closed vent system and control device (defined in § 63.111) to comply with § 63.119(a)(1) or (a)(2) shall comply with § 63.119(e)(1)-(5).	§ 63.120(d)(1) § 63.120(d)(1)(ii) § 63.120(d)(1)(ii)(A) § 63.120(d)(5) § 63.120(d)(6) § 63.148(b)(1)(i) § 63.148(b)(1)(ii) [G]§ 63.148(c) § 63.148(g) § 63.148(g)(2) § 63.148(h) § 63.148(h)(2)	§ 63.123(a) § 63.123(f)(1) [G]§ 63.123(f)(2) § 63.148(g)(2) § 63.148(h)(2) § 63.148(i)(1) § 63.148(i)(2) [G]§ 63.148(i)(4) § 63.148(i)(5) § 63.148(i)(6) [G]§ 63.152(a)	§ 63.120(d)(1)(ii)(B) § 63.120(d)(2) § 63.120(d)(2)(i) [G]§ § 63.120(d)(2)(iii) § 63.120(d)(3) § 63.120(d)(3)(i) § 63.120(d)(3)(ii) § 63.120(d)(4) § 63.122(b) § 63.122(c)(1) [G]§ 63.122(g)(1) [G]§ 63.122(g)(2) § 63.151(a)(7) [G]§ 63.151(b)

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
									[G]§ 63.151(j) [G]§ 63.152(a) § 63.152(b) [G]§ 63.152(b)(1) § 63.152(b)(4) § 63.152(c)(1) § 63.152(c)(2) § 63.152(c)(2)(i) [G]§ 63.152(c)(2)(ii) § 63.152(c)(2)(iii) § 63.152(c)(3) § 63.152(c)(3)(i) § 63.152(c)(4)(ii) [G]§ 63.152(c)(6)
F3	EU	R5112-0001	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(e)(1) § 115.112(e)(3) § 115.112(e)(3)(A) § 115.112(e)(3)(A)(i) § 115.112(e)(3)(A)(ii)	No person shall place, store, or hold VOC in any storage tank unless the storage tank is capable of maintaining working pressure sufficient at all times to prevent any vapor or gas loss to the atmosphere or is in compliance with the control requirements specified in Table 1 of this paragraph for VOC other than crude oil and condensate or Table 2 of subsection (a)(1) of this paragraph for crude oil and condensate.	§ 115.115(a) § 115.115(a)(1) § 115.116(a)(1) [G]§ 115.117	§ 115.118(a)(4) § 115.118(a)(4)(A) § 115.118(a)(5) § 115.118(a)(7)	None
F3	EU	61FF-0002	Benzene	40 CFR Part 61, Subpart FF	§ 61.343(a)(1) § 61.343(a)(1)(i)(A) § 61.343(a)(1)(i)(B) § 61.343(c) § 61.343(d) § 61.349(a) § 61.349(a)(1)(i) § 61.349(a)(1)(iii)	The owner or operator shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the tank to a control device.	§ 61.343(a)(1)(i)(A) § 61.343(c) § 61.349(a)(1)(i) § 61.349(e) § 61.349(f) § 61.354(c) § 61.354(c)(1) [G]§ 61.355(h)	§ 61.354(c) § 61.354(c)(1) § 61.356(d) § 61.356(f) § 61.356(f)(1) § 61.356(f)(2) § 61.356(f)(2)(i) § 61.356(f)(2)(i)(A)	§ 61.357(d)(7) § 61.357(d)(7)(iv) § 61.357(d)(7)(iv)(A)



### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 61.349(a)(1)(iv) § 61.349(a)(2)(i)(C) § 61.349(b) § 61.349(e) § 61.349(f) § 61.349(g)			§ 61.356(g) § 61.356(h) § 61.356(j) § 61.356(j)(1) § 61.356(j)(2) § 61.356(j)(3) § 61.356(j)(4)	
F3	EU	63GT-WW12	112(B) HAPS	40 CFR Part 63, Subpart G	§ 63.133(a)(2)(i) § 63.132(a)(2)(i)(A) § 63.132(a)(2)(i)(B) [G]§ 63.132(f) § 63.133(b)(1)(ii) § 63.133(f) § 63.133(h) § 63.139(b) § 63.139(d)(4)(iii) § 63.139(f) § 63.140(a) § 63.140(b) § 63.140(c) § 63.144(a) [G]§ 63.148(d) § 63.148(e)	A fixed roof and a closed-vent system that routes the organic hazardous air pollutants vapors vented from the wastewater tank to a control device.	§ 63.133(f) § 63.133(g) § 63.133(g)(3) § 63.143(a) § 63.148(b)(1)(ii) § 63.148(b)(2)(iii) § 63.148(b)(3) [G]§ 63.148(c) § 63.148(g) § 63.148(g)(2) § 63.148(h) § 63.148(h)(2)	§ 63.133(h) § 63.147(b) § 63.147(b)(1) § 63.147(b)(2) § 63.147(b)(6) § 63.148(g)(2) § 63.148(h)(2) § 63.148(i)(1) § 63.148(i)(2) [G]§ 63.148(i)(4) § 63.148(i)(5) § 63.148(i)(6) [G]§ 63.152(a)	§ 63.146(b)(2) § 63.146(b)(5) § 63.146(b)(6) § 63.146(c) § 63.146(g) § 63.148(j) § 63.148(j)(1) [G]§ 63.151(b) § 63.151(e) § 63.151(e)(1) § 63.151(e)(2) § 63.151(e)(3) [G]§ 63.151(j) [G]§ 63.152(a) § 63.152(b) [G]§ 63.152(b)(1) [G]§ 63.152(b)(2) § 63.152(b)(4) § 63.152(c)(1) § 63.152(c)(3) § 63.152(c)(3)(i) § 63.152(c)(3)(ii) § 63.152(c)(4)(ii) [G]§ 63.152(c)(6)
F3	EU	63GT-WW4	112(B) HAPS	40 CFR Part 63, Subpart G	§ 63.133(a)(2)(i) § 63.132(a)(2)(i)(A) § 63.132(a)(2)(i)(B) [G]§ 63.132(f) § 63.133(b)(1)(ii) § 63.133(f) § 63.133(h)	A fixed roof and a closed-vent system that routes the organic hazardous air pollutants vapors vented from the wastewater tank to a control device.	§ 63.133(f) § 63.133(g) § 63.133(g)(3) § 63.139(d)(2)(i) § 63.139(e) § 63.143(a) § 63.143(e)	§ 63.133(h) § 63.147(b) § 63.147(b)(1) § 63.147(b)(6) § 63.148(g)(2) § 63.148(h)(2) § 63.148(i)(1)	§ 63.146(b)(2) § 63.146(b)(5) § 63.146(b)(6) § 63.146(c) § 63.146(e) § 63.146(e)(1) § 63.146(g)

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 63.139(b) § 63.139(c)(1) § 63.139(c)(1)(iii) § 63.139(f) § 63.140(a) § 63.140(b) § 63.140(c) § 63.144(a) [G]§ 63.148(d) § 63.148(e)		§ 63.143(e)(1) § 63.143(f) § 63.143(g) § 63.148(b)(1)(ii) § 63.148(b)(2)(iii) § 63.148(b)(3) [G]§ 63.148(c) § 63.148(g) § 63.148(g)(2) § 63.148(h) § 63.148(h)(2)	§ 63.148(i)(2) [G]§ 63.148(i)(4) § 63.148(i)(5) § 63.148(i)(6) [G]§ 63.152(a)	§ 63.148(j) § 63.148(j)(1) [G]§ 63.151(b) § 63.151(e) § 63.151(e)(1) § 63.151(e)(2) § 63.151(e)(3) [G]§ 63.151(g) § 63.151(h) [G]§ 63.151(j) [G]§ 63.152(a) § 63.152(b) [G]§ 63.152(b)(1) [G]§ 63.152(b)(2) § 63.152(b)(4) § 63.152(c)(1) § 63.152(c)(2) § 63.152(c)(2)(i) [G]§ 63.152(c)(2)(ii) § 63.152(c)(2)(iii) § 63.152(c)(2)(iv) § 63.152(c)(3) § 63.152(c)(3)(i) § 63.152(c)(3)(ii) § 63.152(c)(4)(ii) [G]§ 63.152(c)(6)
F3	EU	63GT-WW4	112(B) HAPS	40 CFR Part 63, Subpart G	§ 63.119(e) § 63.119(a)(1) § 63.119(e)(1) § 63.119(e)(3) § 63.119(e)(4) § 63.119(e)(5) [G]§ 63.148(d) § 63.148(e)	The owner or operator who elects to use a closed vent system and control device (defined in § 63.111) to comply with §63.119(a)(1) or (a)(2) shall comply with §63.119(e)(1)-(5).	§ 63.120(d)(1) § 63.120(d)(1)(ii) § 63.120(d)(1)(ii)(A) § 63.120(d)(5) § 63.120(d)(6) § 63.148(b)(1)(i) § 63.148(b)(1)(ii) [G]§ 63.148(c) § 63.148(g) § 63.148(g)(2) § 63.148(h) § 63.148(h)(2)	§ 63.123(a) § 63.123(f)(1) [G]§ 63.123(f)(2) § 63.148(g)(2) § 63.148(h)(2) § 63.148(i)(1) § 63.148(i)(2) [G]§ 63.148(i)(4) § 63.148(i)(5) § 63.148(i)(6) [G]§ 63.152(a)	§ 63.120(d)(1)(ii)(B) § 63.120(d)(2) § 63.120(d)(2)(i) [G]§ 63.120(d)(2)(iii) § 63.120(d)(3) § 63.120(d)(3)(i) § 63.120(d)(3)(ii) § 63.120(d)(4) § 63.122(b) § 63.122(c)(1) [G]§ 63.122(g)(1) [G]§ 63.122(g)(2)

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
									§ 63.151(a)(7) [G]§ 63.151(b) [G]§ 63.151(j) [G]§ 63.152(a) § 63.152(b) [G]§ 63.152(b)(1) § 63.152(b)(4) § 63.152(c)(1) § 63.152(c)(2) § 63.152(c)(2)(i) [G]§ 63.152(c)(2)(ii) § 63.152(c)(2)(iii) § 63.152(c)(3) § 63.152(c)(3)(i) § 63.152(c)(4)(ii) [G]§ 63.152(c)(6)
H1	EU	R5112-0002	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(e)(1) § 115.112(e)(3) § 115.112(e)(3)(A) § 115.112(e)(3)(A)(i) § 115.112(e)(3)(A)(ii)	No person shall place, store, or hold VOC in any storage tank unless the storage tank is capable of maintaining working pressure sufficient at all times to prevent any vapor or gas loss to the atmosphere or is in compliance with the control requirements specified in Table 1 of this paragraph for VOC other than crude oil and condensate or Table 2 of subsection (a)(1) of this paragraph for crude oil and condensate.	§ 115.115(a) § 115.115(a)(1) § 115.116(a)(1) [G]§ 115.117	§ 115.118(a)(4) § 115.118(a)(4)(A) § 115.118(a)(5) § 115.118(a)(7)	None
H1	EU	61FF-0002	Benzene	40 CFR Part 61, Subpart FF	§ 61.343(a)(1) § 61.343(a)(1)(i)(A) § 61.343(a)(1)(i)(B) § 61.343(c) § 61.343(d) § 61.349(a)	The owner or operator shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the tank to a	§ 61.343(a)(1)(i)(A) § 61.343(c) § 61.349(a)(1)(i) § 61.349(e) § 61.349(f) § 61.354(c)	§ 61.354(c) § 61.354(c)(1) § 61.356(d) § 61.356(f) § 61.356(f)(1) § 61.356(f)(2)	§ 61.357(d)(7) § 61.357(d)(7)(iv) § 61.357(d)(7)(iv)(A)

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 61.349(a)(1)(i) § 61.349(a)(1)(iii) § 61.349(a)(1)(iv) § 61.349(a)(2)(i)(C) § 61.349(b) § 61.349(e) § 61.349(f) § 61.349(g)	control device.	§ 61.354(c)(1) [G]§ 61.355(h)	§ 61.356(f)(2)(i) § 61.356(f)(2)(i)(A) § 61.356(g) § 61.356(h) § 61.356(j) § 61.356(j)(1) § 61.356(j)(2) § 61.356(j)(3) § 61.356(j)(4)	
H1	EU	63GGG-2	HAPS	40 CFR Part 63, Subpart GGG	§ 63.1256(b)(1) [G]§ 63.1256(a)(5)(ii) § 63.1256(a)(5)(iii) § 63.1256(a)(5)(iv) § 63.1256(a)(5)(v)	For each wastewater tank that receives, manages, or treats affected wastewater or a residual removed from affected wastewater, the owner or operator shall comply with the requirements of either paragraph (b)(1) or (2) of this section as specified in Table 6 of this subpart.	§ 63.1256(b)(7) § 63.1256(b)(8) § 63.1258(g)(1)	[G]§ 63.1256(a)(5)(ii) § 63.1256(a)(5)(iii) § 63.1256(a)(5)(iv) § 63.1256(a)(5)(v) § 63.1259(a)(1) § 63.1259(f) § 63.1259(g) § 63.1259(i) § 63.1259(i)(1)	None
H2	EU	R5112-0002	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(e)(1) § 115.112(e)(3) § 115.112(e)(3)(A) § 115.112(e)(3)(A)(i) § 115.112(e)(3)(A)(ii)	No person shall place, store, or hold VOC in any storage tank unless the storage tank is capable of maintaining working pressure sufficient at all times to prevent any vapor or gas loss to the atmosphere or is in compliance with the control requirements specified in Table 1 of this paragraph for VOC other than crude oil and condensate or Table 2 of subsection (a)(1) of this paragraph for crude oil and condensate.	§ 115.115(a) § 115.115(a)(1) § 115.116(a)(1) [G]§ 115.117	§ 115.118(a)(4) § 115.118(a)(4)(A) § 115.118(a)(5) § 115.118(a)(7)	None
H2	EU	61FF-0002	Benzene	40 CFR Part 61, Subpart FF	§ 61.343(a)(1) § 61.343(a)(1)(i)(A)	The owner or operator shall install, operate, and	§ 61.343(a)(1)(i)(A) § 61.343(c)	§ 61.354(c) § 61.354(c)(1)	§ 61.357(d)(7) § 61.357(d)(7)(iv)

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 61.343(a)(1)(i)(B) § 61.343(c) § 61.343(d) § 61.349(a) § 61.349(a)(1)(i) § 61.349(a)(1)(iii) § 61.349(a)(1)(iv) § 61.349(a)(2)(i)(C) § 61.349(b) § 61.349(e) § 61.349(f) § 61.349(g)	maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the tank to a control device.	§ 61.349(a)(1)(i) § 61.349(e) § 61.349(f) § 61.354(c) § 61.354(c)(1) [G]§ 61.355(h)	§ 61.356(d) § 61.356(f) § 61.356(f)(1) § 61.356(f)(2) § 61.356(f)(2)(i) § 61.356(f)(2)(i)(A) § 61.356(g) § 61.356(h) § 61.356(j) § 61.356(j)(1) § 61.356(j)(2) § 61.356(j)(3) § 61.356(j)(4)	§ 61.357(d)(7)(iv)(A)
H2	EU	63GGG-2	HAPS	40 CFR Part 63, Subpart GGG	§ 63.1256(b)(1) [G]§ 63.1256(a)(5)(ii) § 63.1256(a)(5)(iii) § 63.1256(a)(5)(iv) § 63.1256(a)(5)(v)	For each wastewater tank that receives, manages, or treats affected wastewater or a residual removed from affected wastewater, the owner or operator shall comply with the requirements of either paragraph (b)(1) or (2) of this section as specified in Table 6 of this subpart.	§ 63.1256(b)(7) § 63.1256(b)(8) § 63.1258(g)(1)	[G]§ 63.1256(a)(5)(iii) § 63.1256(a)(5)(iii) § 63.1256(a)(5)(iv) § 63.1256(a)(5)(v) § 63.1259(a)(1) § 63.1259(f) § 63.1259(g) § 63.1259(i) § 63.1259(i)(1)	None
LOAD-1	EU	R5211-0002	VOC	30 TAC Chapter 115, Loading and Unloading of VOC	§ 115.217(a)(2)(A) [G]§ 115.212(a)(7) § 115.214(a)(1)(B) § 115.214(a)(1)(D) § 115.214(a)(1)(D)(i)	Any plant, excluding gasoline bulk plants, which loads less than 20,000 gpd of VOC with a true vapor pressure of 0.5 psia or greater is exempt from the requirements of this division, except for the specified requirements.	§ 115.214(a)(1)(A) § 115.214(a)(1)(A)(i) § 115.215 § 115.215(4)	§ 115.216 § 115.216(2) § 115.216(3)(B) § 115.216(3)(D)	None
LOAD-1	EU	R5211-001	VOC	30 TAC Chapter 115, Loading and Unloading of VOC	§ 115.217(a)(1) § 115.212(a)(2) § 115.214(a)(1)(B) § 115.214(a)(1)(D) § 115.214(a)(1)(D)(i)	Vapor pressure (at land-based operations). All land-based loading and unloading of VOC with a true vapor pressure less	§ 115.214(a)(1)(A) § 115.214(a)(1)(A)(i) § 115.215 § 115.215(4)	§ 115.216 § 115.216(2) § 115.216(3)(B)	None

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						than 0.5 psia is exempt from the requirements of this division, except as specified.			
PAINT	PRO	R5451-0001	VOC	30 TAC Chapter 115, Subchapter E, Division 5	§ 115.451(a)(3) [G]§ 115.453(c) § 115.453(d)(1) § 115.453(d)(1)(A) § 115.453(d)(1)(B) § 115.453(d)(1)(C) § 115.453(d)(1)(D) § 115.453(d)(1)(E) § 115.453(d)(2) § 115.453(d)(2)(A) § 115.453(d)(2)(B) § 115.453(d)(2)(C) § 115.453(d)(2)(D) § 115.453(d)(2)(E) § 115.453(d)(2)(F) § 115.453(e) § 115.453(e)(1)	Surface coating processes on a property where total coating and solvent usage does not exceed 150 gallons in any consecutive 12-month period are exempt from the VOC limits in §115.453(a) of this title.	§ 115.455(b)	§ 115.458(b)(1) § 115.458(b)(3) § 115.458(b)(5) § 115.458(b)(7)	§ 115.453(e)(2)
PRO-REGEN2	EU	REG2-0002	SO <sub>2</sub>	30 TAC Chapter 112, Sulfur Compounds	§ 112.6(a)	Except as provided in §112.5 and in §112.14 no person may cause, suffer, allow, or permit emissions of SO <sub>2</sub> from any sulfuric acid plant to exceed the emission limits set by the specified equation.	§ 112.2(a) § 112.6(c)	§ 112.2(c)	§ 112.2(b)
PRO-REGEN2	EU	REG2-0002	H <sub>2</sub> SO <sub>4</sub>	30 TAC Chapter 112, Sulfur Compounds	§ 112.41(b) § 112.41(b)(1)	Sulfuric acid or oleum facilities may not permit emissions of H <sub>2</sub> SO <sub>4</sub> mist to exceed 0.50 lb/ton (0.25 gram/kg) of 100% H <sub>2</sub> SO <sub>4</sub> produced when burning specified compounds by the contact process.	§ 112.43(b) § 112.43(c) [G]§ 112.43(c)(1) [G]§ 112.43(c)(2) § 112.45(a)	[G]§ 112.45(b)	None
PRO-	PRO	60H-001	SO <sub>2</sub>	40 CFR Part 60,	§ 60.82(a)	On and after the §60.8	§ 60.84(a)	None	§ 60.84(e)

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
REGEN2				Subpart H		performance test, no owner or operator shall discharge gases containing SO <sub>2</sub> in excess of 2 kg per metric ton (4.0 lb per ton) of acid produced into the atmosphere.	§ 60.84(b) § 60.84(c) § 60.84(e) § 60.85(a) § 60.85(b)(1) § 60.85(b)(2) § 60.85(b)(3) ** See CAM Summary		
PRO-REGEN2	PRO	60H-001	PM (Opacity)	40 CFR Part 60, Subpart H	§ 60.83(a)(2)	No owner or operator shall discharge any gases exhibiting 10% opacity, or greater.	§ 60.85(a) § 60.85(b)(4)	None	None
PRO-REGEN2	PRO	60H-001	H <sub>2</sub> SO <sub>4</sub>	40 CFR Part 60, Subpart H	§ 60.83(a)(1)	No owner or operator shall discharge any gases containing acid mist, expressed as H <sub>2</sub> SO <sub>4</sub> , in excess of 0.075 kg per metric ton (0.15 lb per ton) of acid produced, the production being expressed as 100% H <sub>2</sub> SO <sub>4</sub> .	§ 60.85(a) § 60.85(b)(1) § 60.85(b)(2) § 60.85(b)(3)	None	None
PRO-REGEN2	PRO	61FF-0001	Benzene	40 CFR Part 61, Subpart FF	§ 61.348(a)(5) § 61.348(b)(1) [G]§ 61.348(d) § 61.348(e) § 61.348(e)(1) § 61.348(e)(2)	An owner or operator that aggregates or mixes any combination of process wastewater, product tank drawdown, or landfill leachate subject to §61.342(c)(1) together with other waste streams to create a combined waste stream for the purpose of facilitating management or treatment of waste in a wastewater treatment system shall operate the wastewater treatment system in accordance with §61.348(b). These	§ 61.348(e)(1) [G]§ 61.354(b)	§ 61.356(e) § 61.356(e)(1) [G]§ 61.356(i)	§ 61.357(d)(7) § 61.357(d)(7)(iii)

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						provisions apply to above- and below-ground level wastewater treatment systems.			
PRO-REGEN2	PRO	63GTP-WW19	112(B) HAPS	40 CFR Part 63, Subpart G	§ 63.138(h) [G]§ 63.132(f) § 63.138(h)(1) § 63.138(h)(2)(i) § 63.138(h)(2)(ii) § 63.138(h)(3) [G]§ 63.138(k) § 63.140(a) § 63.140(b) § 63.140(c) § 63.144(a)	Treatment units in a RCRA unit option shall meet §63.138(h)(1), (h)(2), or (h)(3), and are exempt from §63.138(a)(3), §63.138(j), §63.132(a)(2)(iii) and §63.132(b)(3)(iii)	§ 63.144(b) § 63.144(b)(1) § 63.144(b)(2) § 63.144(b)(3) § 63.144(b)(4) § 63.144(b)(5) [G]§ 63.144(b)(5)(i) § 63.144(b)(5)(ii) [G]§ 63.144(b)(5)(iii) § 63.144(b)(5)(iv) § 63.144(b)(6) § 63.144(c) § 63.144(c)(1) § 63.144(c)(2) § 63.144(c)(3) § 63.144(c)(4)	§ 63.144(b)(3) § 63.144(b)(4) § 63.144(b)(5)(ii) § 63.144(c)(1) § 63.144(c)(2) § 63.144(c)(3) § 63.147(b) § 63.147(b)(7) [G]§ 63.152(a) [G]§ 63.152(f)	§ 63.146(b)(2) § 63.146(b)(4) § 63.146(b)(5) § 63.146(b)(6) [G]§ 63.151(b) § 63.151(e) § 63.151(e)(1) § 63.151(e)(2) § 63.151(e)(3) [G]§ 63.151(j) [G]§ 63.152(a) § 63.152(b) [G]§ 63.152(b)(1) § 63.152(c)(1) § 63.152(c)(4)(ii) [G]§ 63.152(c)(6)
PRO-REGEN2	EU	63GGG-1	HAPS	40 CFR Part 63, Subpart GGG	§ 63.1256(g)(4) § 63.1256(g)(13)(ii)(A)	If the Resource Conservation and Recovery Act (RCRA) option [paragraph (g)(13) of this section] or the enhanced biological treatment process for soluble HAP compounds option [paragraph (g)(10) of this section] is selected to comply with this section, neither a design evaluation nor a performance test is required.	§ 63.1256(g)(4) § 63.1257(a)(4) § 63.1257(a)(4)(iii)	§ 63.1259(a)(1)	None
PRO-UNIT8	PRO	REG2-0001	SO <sub>2</sub>	30 TAC Chapter 112, Sulfur Compounds	§ 112.5(a)	No person may cause, suffer, allow, or permit emissions of SO <sub>2</sub> from any sulfuric acid plant burning elemental sulfur to exceed	§ 112.2(a) § 112.5(c)	§ 112.2(c)	§ 112.2(b)



### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						the emission limits set by the specified equation.			
PRO-UNIT8	PRO	REG2-0001	H <sub>2</sub> SO <sub>4</sub>	30 TAC Chapter 112, Sulfur Compounds	§ 112.41(b) § 112.41(b)(1)	Sulfuric acid or oleum facilities may not permit emissions of H <sub>2</sub> SO <sub>4</sub> mist to exceed 0.50 lb/ton (0.25 gram/kg) of 100% H <sub>2</sub> SO <sub>4</sub> produced when burning specified compounds by the contact process.	§ 112.43(b) § 112.43(c) [G]§ 112.43(c)(1) [G]§ 112.43(c)(2) § 112.45(a)	[G]§ 112.45(b)	None
PRO-UNIT8	PRO	60H-001	SO <sub>2</sub>	40 CFR Part 60, Subpart H	§ 60.82(a)	On and after the §60.8 performance test, no owner or operator shall discharge gases containing SO <sub>2</sub> in excess of 2 kg per metric ton (4.0 lb per ton) of acid produced into the atmosphere.	§ 60.84(a) § 60.84(b) § 60.84(c) § 60.84(e) § 60.85(a) § 60.85(b)(1) § 60.85(b)(2) § 60.85(b)(3) ** See CAM Summary	None	§ 60.84(e)
PRO-UNIT8	PRO	60H-001	PM (Opacity)	40 CFR Part 60, Subpart H	§ 60.83(a)(2)	No owner or operator shall discharge any gases exhibiting 10% opacity, or greater.	§ 60.85(a) § 60.85(b)(4)	None	None
PRO-UNIT8	PRO	60H-001	H <sub>2</sub> SO <sub>4</sub>	40 CFR Part 60, Subpart H	§ 60.83(a)(1)	No owner or operator shall discharge any gases containing acid mist, expressed as H <sub>2</sub> SO <sub>4</sub> , in excess of 0.075 kg per metric ton (0.15 lb per ton) of acid produced, the production being expressed as 100% H <sub>2</sub> SO <sub>4</sub> .	§ 60.85(a) § 60.85(b)(1) § 60.85(b)(2) § 60.85(b)(3)	None	None

**Additional Monitoring Requirements**

<b>Compliance Assurance Monitoring Summary .....</b>	<b>49</b>
<b>Periodic Monitoring Summary .....</b>	<b>51</b>

### CAM Summary

Unit/Group/Process Information	
ID No.: PRO-REGEN2	
Control Device ID No.: PRO-REGEN2	Control Device Type: SO2 Scrubber
Applicable Regulatory Requirement	
Name: 40 CFR Part 60, Subpart H	SOP Index No.: 60H-001
Pollutant: SO <sub>2</sub>	Main Standard: § 60.82(a)
Monitoring Information	
Indicator: Sulfur Dioxide Concentration	
Minimum Frequency: four times per hour	
Averaging Period: one hour	
Deviation Limit: SO <sub>2</sub> emission rates in excess of 4 pounds of SO <sub>2</sub> per ton of 100% sulfuric acid produced shall be considered and reported as a deviation.	
CAM Text: Use a continuous emission monitoring system (CEMS) to measure and record sulfur dioxide emissions in the exhaust stream of the control device. The CEMS shall be operated in accordance with the monitoring requirements of 40 CFR § 60.13 and the performance specifications of 40 CFR Part 60, Appendix B. In addition, monitor oxygen or carbon dioxide with a CEMS operated in accordance with above CEMS procedures.	

### CAM Summary

Unit/Group/Process Information	
ID No.: PRO-UNIT8	
Control Device ID No.: PRO-UNIT8	Control Device Type: SO2 Scrubber
Applicable Regulatory Requirement	
Name: 40 CFR Part 60, Subpart H	SOP Index No.: 60H-001
Pollutant: SO <sub>2</sub>	Main Standard: § 60.82(a)
Monitoring Information	
Indicator: Sulfur Dioxide Concentration	
Minimum Frequency: four times per hour	
Averaging Period: one hour	
Deviation Limit: SO <sub>2</sub> emission rates in excess of 4 pounds of SO <sub>2</sub> per ton of 100% sulfuric acid produced shall be considered and reported as a deviation.	
CAM Text: Use a continuous emission monitoring system (CEMS) to measure and record sulfur dioxide emissions in the exhaust stream of the control device. The CEMS shall be operated in accordance with the monitoring requirements of 40 CFR § 60.13 and the performance specifications of 40 CFR Part 60, Appendix B. In addition, monitor oxygen or carbon dioxide with a CEMS operated in accordance with above CEMS procedures.	

### Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: 101	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Visible Emissions	SOP Index No.: R1111-0001
Pollutant: Opacity	Main Standard: § 111.111(a)(1)(C)
Monitoring Information	
Indicator: Opacity	
Minimum Frequency: Once per month	
Averaging Period: Six-minutes	
Deviation Limit: An opacity greater than 10% will be reported as a deviation.	
Periodic Monitoring Text: Opacity shall be monitored, by a certified observer, for at least one, six-minute period in accordance with Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60), Appendix A, Test Method 9. Any opacity readings above the deviation limit shall be reported as a deviation.	

### Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: 48	
Control Device ID No.: CVS	Control Device Type: Vapor Collection System
Applicable Regulatory Requirement	
Name: 40 CFR Part 60, Subpart Kb	SOP Index No.: 60Kb-0002B
Pollutant: VOC	Main Standard: [G]§ 60.112b(a)(3)
Monitoring Information	
Indicator: VOC Concentration	
Minimum Frequency: Once per year	
Averaging Period: n/a	
Deviation Limit: Fugitive emissions greater than 500 ppm above background shall be considered and reported as a deviation.	
Periodic Monitoring Text: Measure and record fugitive emissions from the vapor collection system in accordance with part 60, appendix A, method 21.	

### Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: 48	
Control Device ID No.: CVS	Control Device Type: Vapor Collection System
Applicable Regulatory Requirement	
Name: 40 CFR Part 60, Subpart Kb	SOP Index No.: 60Kb-0002B
Pollutant: VOC	Main Standard: [G]§ 60.112b(a)(3)
Monitoring Information	
Indicator: Visual Inspection	
Minimum Frequency: Once per year	
Averaging Period: n/a	
Deviation Limit: Visual leaks in the closed vent system shall be considered and reported as a deviation.	
Periodic Monitoring Text: Visually inspect all components of the vapor collection system for defects, such as cracks, holes, gaps, loose connections, or broken or missing covers or other closure devices, that could result in air emissions.	

### Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: 48	
Control Device ID No.: 170	Control Device Type: Vapor Combustor
Control Device ID No.: PRO-REGEN2	Control Device Type: Thermal Incinerator (Direct Flame Incinerator/Regenerative Thermal Oxidizer)
Control Device ID No.: TKINSPMSS2	Control Device Type: Vapor Combustor
Applicable Regulatory Requirement	
Name: 40 CFR Part 60, Subpart Kb	SOP Index No.: 60Kb-0002B
Pollutant: VOC	Main Standard: [G]§ 60.112b(a)(3)
Monitoring Information	
Indicator: Combustion temperature	
Minimum Frequency: Once per week	
Averaging Period: Six-minutes	
Deviation Limit: A combustion temperature below the minimum temperature of 1400 degrees Fahrenheit or as established in the NSR permit on a 6-minute averaging period shall be considered and reported as a deviation.	
Periodic Monitoring Text: Measure and record the combustion temperature in the combustion chamber or immediately downstream of the combustion chamber. Establish a minimum combustion temperature using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation.	



### Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: 49	
Control Device ID No.: CVS	Control Device Type: Vapor Collection System
Applicable Regulatory Requirement	
Name: 40 CFR Part 60, Subpart Kb	SOP Index No.: 60Kb-0002B
Pollutant: VOC	Main Standard: [G]§ 60.112b(a)(3)
Monitoring Information	
Indicator: VOC Concentration	
Minimum Frequency: Once per year	
Averaging Period: n/a	
Deviation Limit: Fugitive emissions greater than 500 ppm above background shall be considered and reported as a deviation.	
Periodic Monitoring Text: Measure and record fugitive emissions from the vapor collection system in accordance with part 60, appendix A, method 21.	

### Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: 49	
Control Device ID No.: CVS	Control Device Type: Vapor Collection System
Applicable Regulatory Requirement	
Name: 40 CFR Part 60, Subpart Kb	SOP Index No.: 60Kb-0002B
Pollutant: VOC	Main Standard: [G]§ 60.112b(a)(3)
Monitoring Information	
Indicator: Visual Inspection	
Minimum Frequency: Once per year	
Averaging Period: n/a	
Deviation Limit: Visual leaks in the closed vent system shall be considered and reported as a deviation.	
Periodic Monitoring Text: Visually inspect all components of the vapor collection system for defects, such as cracks, holes, gaps, loose connections, or broken or missing covers or other closure devices, that could result in air emissions.	

### Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: 49	
Control Device ID No.: 170	Control Device Type: Vapor Combustor
Control Device ID No.: PRO-REGEN2	Control Device Type: Thermal Incinerator (Direct Flame Incinerator/Regenerative Thermal Oxidizer)
Control Device ID No.: TKINSPMSS2	Control Device Type: Vapor Combustor
Applicable Regulatory Requirement	
Name: 40 CFR Part 60, Subpart Kb	SOP Index No.: 60Kb-0002B
Pollutant: VOC	Main Standard: [G]§ 60.112b(a)(3)
Monitoring Information	
Indicator: Combustion temperature	
Minimum Frequency: Once per week	
Averaging Period: Six-minutes	
Deviation Limit: A combustion temperature below the minimum temperature of 1400 degrees Fahrenheit or as established in the NSR permit on a 6-minute averaging period shall be considered and reported as a deviation.	
Periodic Monitoring Text: Measure and record the combustion temperature in the combustion chamber or immediately downstream of the combustion chamber. The monitoring instrumentation shall be maintained, calibrated and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation.	

### Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: 53	
Control Device ID No.: CVS	Control Device Type: Vapor Collection System
Applicable Regulatory Requirement	
Name: 40 CFR Part 60, Subpart Kb	SOP Index No.: 60Kb-0002
Pollutant: VOC	Main Standard: [G]§ 60.112b(a)(3)
Monitoring Information	
Indicator: VOC Concentration	
Minimum Frequency: Once per year	
Averaging Period: n/a	
Deviation Limit: Fugitive emissions greater than 500 ppm above background shall be considered and reported as a deviation.	
Periodic Monitoring Text: Measure and record fugitive emissions from the vapor collection system in accordance with part 60, appendix A, method 21.	

### Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: 53	
Control Device ID No.: CVS	Control Device Type: Vapor Collection System
Applicable Regulatory Requirement	
Name: 40 CFR Part 60, Subpart Kb	SOP Index No.: 60Kb-0002
Pollutant: VOC	Main Standard: [G]§ 60.112b(a)(3)
Monitoring Information	
Indicator: Visual Inspection	
Minimum Frequency: Once per year	
Averaging Period: n/a	
Deviation Limit: Visual leaks in the closed vent system shall be considered and reported as a deviation.	
Periodic Monitoring Text: Visually inspect all components of the vapor collection system for defects, such as cracks, holes, gaps, loose connections, or broken or missing covers or other closure devices, that could result in air emissions.	

### Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: 53	
Control Device ID No.: 170	Control Device Type: Vapor Combustor
Control Device ID No.: PRO-REGEN2	Control Device Type: Thermal Incinerator (Direct Flame Incinerator/Regenerative Thermal Oxidizer)
Control Device ID No.: TKINSPMSS2	Control Device Type: Vapor Combustor
Applicable Regulatory Requirement	
Name: 40 CFR Part 60, Subpart Kb	SOP Index No.: 60Kb-0002
Pollutant: VOC	Main Standard: [G]§ 60.112b(a)(3)
Monitoring Information	
Indicator: Combustion temperature	
Minimum Frequency: Once per week	
Averaging Period: Six-minutes	
Deviation Limit: A combustion temperature below the minimum temperature of 1400 degrees Fahrenheit or as established in the NSR permit on a 6-minute averaging period shall be considered and reported as a deviation.	
Periodic Monitoring Text: Measure and record the combustion temperature in the combustion chamber or immediately downstream of the combustion chamber. The monitoring instrumentation shall be maintained, calibrated and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation.	

### Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: B1	
Control Device ID No.: CVS	Control Device Type: Vapor Collection System
Applicable Regulatory Requirement	
Name: 40 CFR Part 60, Subpart Kb	SOP Index No.: 60Kb-0002
Pollutant: VOC	Main Standard: [G]§ 60.112b(a)(3)
Monitoring Information	
Indicator: VOC Concentration	
Minimum Frequency: Once per year	
Averaging Period: n/a	
Deviation Limit: Fugitive emissions greater than 500 ppm above background shall be considered and reported as a deviation.	
Periodic Monitoring Text: Measure and record fugitive emissions from the vapor collection system in accordance with part 60, appendix A, method 21.	

### Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: B1	
Control Device ID No.: CVS	Control Device Type: Vapor Collection System
Applicable Regulatory Requirement	
Name: 40 CFR Part 60, Subpart Kb	SOP Index No.: 60Kb-0002
Pollutant: VOC	Main Standard: [G]§ 60.112b(a)(3)
Monitoring Information	
Indicator: Visual Inspection	
Minimum Frequency: Once per year	
Averaging Period: n/a	
Deviation Limit: Visual leaks in the closed vent system shall be considered and reported as a deviation.	
Periodic Monitoring Text: Visually inspect all components of the vapor collection system for defects, such as cracks, holes, gaps, loose connections, or broken or missing covers or other closure devices, that could result in air emissions.	



### Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: B1	
Control Device ID No.: 120	Control Device Type: Vapor Combustor
Control Device ID No.: PRO-REGEN2	Control Device Type: Thermal Incinerator (Direct Flame Incinerator/Regenerative Thermal Oxidizer)
Applicable Regulatory Requirement	
Name: 40 CFR Part 60, Subpart Kb	SOP Index No.: 60Kb-0002
Pollutant: VOC	Main Standard: [G]§ 60.112b(a)(3)
Monitoring Information	
Indicator: Combustion temperature	
Minimum Frequency: Once per week	
Averaging Period: Six-minutes	
Deviation Limit: A combustion temperature below the minimum temperature of 1400 degrees Fahrenheit or as established in the NSR permit on a 6-minute averaging period shall be considered and reported as a deviation.	
Periodic Monitoring Text: Measure and record the combustion temperature in the combustion chamber or immediately downstream of the combustion chamber. The monitoring instrumentation shall be maintained, calibrated and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation.	

### Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: B2	
Control Device ID No.: CVS	Control Device Type: Vapor Collection System
Applicable Regulatory Requirement	
Name: 40 CFR Part 60, Subpart Kb	SOP Index No.: 60Kb-0002
Pollutant: VOC	Main Standard: [G]§ 60.112b(a)(3)
Monitoring Information	
Indicator: VOC Concentration	
Minimum Frequency: Once per year	
Averaging Period: n/a	
Deviation Limit: Fugitive emissions greater than 500 ppm above background shall be considered and reported as a deviation.	
Periodic Monitoring Text: Measure and record fugitive emissions from the vapor collection system in accordance with part 60, appendix A, method 21.	

### Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: B2	
Control Device ID No.: CVS	Control Device Type: Vapor Collection System
Applicable Regulatory Requirement	
Name: 40 CFR Part 60, Subpart Kb	SOP Index No.: 60Kb-0002
Pollutant: VOC	Main Standard: [G]§ 60.112b(a)(3)
Monitoring Information	
Indicator: Visual Inspection	
Minimum Frequency: Once per year	
Averaging Period: n/a	
Deviation Limit: Visual leaks in the closed vent system shall be considered and reported as a deviation.	
Periodic Monitoring Text: Visually inspect all components of the vapor collection system for defects, such as cracks, holes, gaps, loose connections, or broken or missing covers or other closure devices, that could result in air emissions.	

### Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: B2	
Control Device ID No.: 120	Control Device Type: Vapor Combustor
Control Device ID No.: PRO-REGEN2	Control Device Type: Thermal Incinerator (Direct Flame Incinerator/Regenerative Thermal Oxidizer)
Applicable Regulatory Requirement	
Name: 40 CFR Part 60, Subpart Kb	SOP Index No.: 60Kb-0002
Pollutant: VOC	Main Standard: [G]§ 60.112b(a)(3)
Monitoring Information	
Indicator: Combustion temperature	
Minimum Frequency: Once per week	
Averaging Period: Six-minutes	
Deviation Limit: A combustion temperature below the minimum temperature of 1400 degrees Fahrenheit or as established in the NSR permit on a 6-minute averaging period shall be considered and reported as a deviation.	
Periodic Monitoring Text: Measure and record the combustion temperature in the combustion chamber or immediately downstream of the combustion chamber. The monitoring instrumentation shall be maintained, calibrated and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation.	

**Permit Shield**

**Permit Shield ..... 68**

### Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

Unit/Group/Process		Regulation	Basis of Determination
ID No.	Group/Inclusive Units		
117	N/A	40 CFR Part 60, Subpart D	Boiler was constructed prior to 08/17/1971
117	N/A	40 CFR Part 60, Subpart Db	Boiler was constructed, modified or reconstructed before June 19, 1984
49	N/A	40 CFR Part 60, Subpart K	Tank was constructed prior to 1973.
56	N/A	40 CFR Part 60, Subpart K	Tank was constructed prior to 1973.
78	N/A	40 CFR Part 60, Subpart K	Tank was constructed prior to 1973.
DIESEL	N/A	30 TAC Chapter 115, Storage of VOCs	Storage tank has less than or equal to 1000 gallon capacity.
DIESEL	N/A	40 CFR Part 60, Subpart Kb	Tank capacity is less than 75 cubic meters.
F2	N/A	40 CFR Part 60, Subpart K	Tank does not store petroleum liquids.
F3	N/A	40 CFR Part 60, Subpart K	Tank does not store petroleum liquids.
GRPCOOL	#7CT, #8CT, AUXCT, AWTCT, CT GE, CT REGEN2, OFF CT, REGCT, TXUPCT	40 CFR Part 63, Subpart Q	Cooling towers are not operated with chromium based chemicals.
H1	N/A	40 CFR Part 60, Subpart Kb	Tank capacity is less than 75 cubic meters.
H2	N/A	40 CFR Part 60, Subpart Kb	Tank capacity is less than 75 cubic meters.
PIR-2	N/A	30 TAC Chapter 117, Commercial	Sulfuric acid regeneration is exempt from TAC 117 requirements.
U-8	N/A	30 TAC Chapter 117, Commercial	Molten sulfur oxidation furnace is exempt from TAC 117 requirements.

**New Source Review Authorization References**

<b>New Source Review Authorization References .....</b>	<b>70</b>
<b>New Source Review Authorization References by Emission Unit .....</b>	<b>71</b>

### New Source Review Authorization References

The New Source Review authorizations listed in the table below are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

<b>Prevention of Significant Deterioration (PSD) Permits</b>	
PSD Permit No.: PSDTX1081	Issuance Date: 06/20/2016
PSD Permit No.: PSDTX1260	Issuance Date: 07/26/2018
<b>Title 30 TAC Chapter 116 Permits, Special Permits, and Other Authorizations (Other Than Permits By Rule, PSD Permits, or NA Permits) for the Application Area.</b>	
Authorization No.: 149180	Issuance Date: 11/21/2017
Authorization No.: 19282	Issuance Date: 06/20/2016
Authorization No.: 4802	Issuance Date: 07/26/2018
Authorization No.: 56566	Issuance Date: 09/14/2016
Authorization No.: 92041	Issuance Date: 04/05/2010
<b>Permits By Rule (30 TAC Chapter 106) for the Application Area</b>	
Number: 106.183	Version No./Date: 06/18/1997
Number: 106.261	Version No./Date: 03/14/1997
Number: 106.261	Version No./Date: 11/01/2003
Number: 106.262	Version No./Date: 11/01/2003
Number: 106.263	Version No./Date: 11/01/2001
Number: 106.371	Version No./Date: 03/14/1997
Number: 106.371	Version No./Date: 09/04/2000
Number: 106.412	Version No./Date: 09/04/2000
Number: 106.433	Version No./Date: 09/04/2000
Number: 106.452	Version No./Date: 09/04/2000
Number: 106.454	Version No./Date: 09/04/2000
Number: 106.472	Version No./Date: 03/14/1997
Number: 106.472	Version No./Date: 09/04/2000
Number: 106.511	Version No./Date: 09/04/2000
Number: 7	Version No./Date: 09/12/1989
<b>Municipal Solid Waste and Industrial Hazardous Waste Permits With an Air Addendum</b>	
Permit No.: HW50095	



### New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
#7CT	#7 COOLING TOWER	106.371/03/14/1997
#8CT	#8 COOLING TOWER	106.371/03/14/1997
101	UNIT NO. 8 STACK	19282, PSDTX1081
117	PACKAGE BOILER	56566
128	REGEN 2 PREHEATER	4802, PSDTX1260
48	SPENT ACID TANK	4802, PSDTX1260
49	SPENT ACID TANK	4802, PSDTX1260
53	SPENT ACID TANK	4802, PSDTX1260
56	SPENT ACID TANK	4802, PSDTX1260
78	SPENT ACID TANK	4802, PSDTX1260
AUXCT	AUXILIARY COOLING TOWER	106.371/03/14/1997
AWTCT	ADVANCED WASTEWATER TREATMENT COOLING TOWER	106.371/03/14/1997
B1	HAZARDOUS WASTE TANK B1	4802, PSDTX1260
B2	HAZARDOUS WASTE TANK B2	4802, PSDTX1260
CT GE	GE COOLING TOWER	106.371/09/04/2000
CT REGEN2	REGEN 2 COOLING TOWER	106.371/09/04/2000
DIESEL TK	DIESEL TANK	106.412/09/04/2000
DIESEL	DIESEL TANK	106.472/03/14/1997
DWP1	DIESEL EMERGENCY ENGINE	106.511/09/04/2000
DWP2	DIESEL FIRE WATER PUMP	106.511/09/04/2000
F2	HAZARDOUS WASTE TANK F2	4802, PSDTX1260

### New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
F3	HAZARDOUS WASTE TANK F3	4802, PSDTX1260
H1	HAZARDOUS WASTE TANK H1	4802, PSDTX1260
H2	HAZARDOUS WASTE TANK H2	4802, PSDTX1260
LOAD-1	SPENT ACID LOADING	4802, 56566, PSDTX1260
OFF CT	FRONT OFFICE COOLING TOWER	106.371/09/04/2000
PAINT	WET PAINT OPERATIONS	106.433/09/04/2000, 106.452/09/04/2000
PIR-2	SPENT ACID REGENERATION UNIT 2	HW50095, 4802, PSDTX1260
PRO-REGEN2	REGEN 2 PROCESS UNIT/FURNACE	HW50095, 4802, PSDTX1260
PRO-UNIT8	UNIT NO. 8 PROCESS UNIT	19282, PSDTX1081
REGCT	REGEN COOLING TOWER	106.371/03/14/1997
TXUPCT	ULTRA PURE SULFURIC ACID COOLING TOWER	106.371/03/14/1997
U-8	UNIT 8 MOLTEN SULFUR FURNACE	19282, PSDTX1081

**Appendix A**

**Acronym List ..... 74**

## Acronym List

The following abbreviations or acronyms may be used in this permit:

ACFM .....	actual cubic feet per minute
AMOC .....	alternate means of control
ARP .....	Acid Rain Program
ASTM .....	American Society of Testing and Materials
B/PA .....	Beaumont/Port Arthur (nonattainment area)
CAM .....	Compliance Assurance Monitoring
CD .....	control device
CEMS .....	continuous emissions monitoring system
CFR .....	Code of Federal Regulations
COMS .....	continuous opacity monitoring system
CVS .....	closed vent system
D/FW .....	Dallas/Fort Worth (nonattainment area)
EP .....	emission point
EPA .....	U.S. Environmental Protection Agency
EU .....	emission unit
FCAA Amendments .....	Federal Clean Air Act Amendments
FOP .....	federal operating permit
gr/100 scf .....	grains per 100 standard cubic feet
HAP .....	hazardous air pollutant
H/G/B .....	Houston/Galveston/Brazoria (nonattainment area)
H <sub>2</sub> S .....	hydrogen sulfide
ID No. ....	identification number
lb/hr .....	pound(s) per hour
MACT .....	Maximum Achievable Control Technology (40 CFR Part 63)
MMBtu/hr .....	Million British thermal units per hour
NA .....	nonattainment
N/A .....	not applicable
NADB .....	National Allowance Data Base
NESHAP .....	National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61)
NO <sub>x</sub> .....	nitrogen oxides
NSPS .....	New Source Performance Standard (40 CFR Part 60)
NSR .....	New Source Review
ORIS .....	Office of Regulatory Information Systems
Pb .....	lead
PBR .....	Permit By Rule
PEMS .....	predictive emissions monitoring system
PM .....	particulate matter
ppmv .....	parts per million by volume
PRO .....	process unit
PSD .....	prevention of significant deterioration
psia .....	pounds per square inch absolute
SIP .....	state implementation plan
SO <sub>2</sub> .....	sulfur dioxide
TCEQ .....	Texas Commission on Environmental Quality
TSP .....	total suspended particulate
TVP .....	true vapor pressure
U.S.C. ....	United States Code
VOC .....	volatile organic compound

**Appendix B**

**Major NSR Summary Table ..... 76**

Major NSR Summary Table

Permit Number: 19282/PSDTX1081					Issuance Date: 06/20/2016		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/ Application Information	Special Condition/ Application Information	Special Condition/ Application Information
101	Unit No. 8 Stack	CO	1.75	7.65	2, 3, 5, 6, 7	2, 3, 5, 6, 7, 8	5
		H2SO4 (7)	13.00	56.94			
		NOx	9.75	42.7			
		PM	3.36	14.72			
		PM10	3.36	14.72			
		PM2.5	3.36	14.72			
		SO2	325.00	724.20			
		Ag	0.022	0.095			
		As	0.068	0.297			
		Ba	0.023	0.099			
		Be	0.014	0.063			
		Cd	0.014	0.063			
		Cl2	0.721	3.159			
		Cr	0.077	0.337			
		Hg	0.0004	0.002			
		Ni	0.061	0.267			
		Pb	0.032	0.141			
		Sb	0.037	0.158			
		Se	0.044	0.192			
		Tl	0.014	0.063			

**Major NSR Summary Table**

Permit Number: 19282/PSDTX1081					Issuance Date: 06/20/2016		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/ Application Information	Special Condition/ Application Information	Special Condition/ Application Information
102	Acid Pump Tank	SO2	0.01	0.01	4	4	
103	Natural Gas Start Up Vent (9)	CO	4.12	--		2	
		NOx	4.90	--			
		PM	0.37	--			
		PM10	0.37	--			
		PM2.5	0.37	--			
		SO2	0.03	--			
		VOC	0.27	--			
105	Natural Gas Start Up Vent (9)	CO	4.12	--		2	
		NOx	4.90	--			
		PM	0.37	--			
		PM10	0.37	--			
		PM2.5	0.37	--			
		SO2	0.03	--			
		VOC	0.27	--			

Major NSR Summary Table

Permit Number: 19282/PSDTX1081					Issuance Date: 06/20/2016		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/ Application Information	Special Condition/ Application Information	Special Condition/ Application Information
106	Natural Gas Start Up Vent (9)	CO	4.12	--		2	
		NOx	4.90	--			
		PM	0.37	--			
		PM10	0.37	--			
		PM2.5	0.37	--			
		SO2	0.03	--			
		VOC	0.27	--			
	Annual Emission Cap (6) (EPNs 103, 105 and 106)	CO	--	0.31		2	
		NOx	--	0.37			
		PM	--	0.03			
		PM10	--	0.03			
		PM2.5	--	0.03			
		SO2	--	0.01			
		VOC	--	0.02			



**Major NSR Summary Table**

Permit Number: 19282/PSDTX1081					Issuance Date: 06/20/2016		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/ Application Information	Special Condition/ Application Information	Special Condition/ Application Information
CATSCNU8	Catalyst Screening (8)	PM	0.01	0.01	9	9	9
		PM10	0.01	0.01			
		PM2.5	0.01	0.01			
FE1	Process Fugitives (5)	SO2	0.01	0.03	4	4	

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.

(2) Specific point source name. For fugitive sources, use area name or fugitive source name.

(3) Exempt Solvent - Those carbon compounds or mixtures of carbon compounds used as solvents which have been excluded from the definition of volatile organic compound.

VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1

HRVOC - highly reactive volatile organic compounds as defined in 30 TAC § 115.10

IOC-U - inorganic compounds (unspeciated)

NO<sub>x</sub> - total oxides of nitrogen

SO<sub>2</sub> - sulfur dioxide

PM - total particulate matter, suspended in the atmosphere, including PM<sub>10</sub> and PM<sub>2.5</sub>, as represented

PM<sub>10</sub> - total particulate matter equal to or less than 10 microns in diameter, including PM<sub>2.5</sub>, as represented

PM<sub>2.5</sub> - particulate matter equal to or less than 2.5 microns in diameter

CO - carbon monoxide

HAP - hazardous air pollutant as listed in § 112(b) of the Federal Clean Air Act or Title 40 Code of Federal Regulations Part 63, Subpart C

(4) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period.

(5) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.

**Major NSR Summary Table**

Permit Numbers: 4802 and PSDTX1260					Issuance Date: 07/26/2018		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/ Application Information	Special Condition/ Application Information	Special Condition/ Application Information
104	Regeneration Unit No. 2 Stack	Cl <sub>2</sub>	0.01	0.05	3, 4, 5, 6, 7, 9, 10, 14, 22, 26, 28, 29, 30, 31	3, 4, 5, 6, 7, 9, 10, 14, 22, 26, 28, 29, 30, 31	5, 6, 7, 26, 31
		CO	5.70	25.00			
		H <sub>2</sub> SO <sub>4</sub> (8)	7.19	20.99			
		HCl	0.16	0.70			
		NO <sub>x</sub>	37.20	61.95			
		PM	4.01	12.47			
		PM <sub>10</sub>	4.01	12.47			
		PM <sub>2.5</sub>	4.01	12.47			
		SO <sub>2</sub>	143.75	377.78			
		VOC	0.01	0.01			
104	VOCs from Natural Gas Combustion	VOC	0.46	1.10	5, 9, 10, 26	5, 9, 10, 26	5, 26
104	Railcar Depressurizing, Tank Truck Depressurizing, and Tanks 48, 49, 53, 56, and 78	SO <sub>2</sub>	0.46	0.13	3, 5, 6, 7, 10, 16, 19, 22, 26, 29	3, 5, 6, 7, 10, 16, 19, 22, 26, 29	5, 6, 7, 26
		VOC	0.01	0.01			

**Major NSR Summary Table**

Permit Numbers: 4802 and PSDTX1260					Issuance Date: 07/26/2018		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/ Application Information	Special Condition/ Application Information	Special Condition/ Application Information
120	Vapor Combustor Standby Operation	CO	1.51	3.33	5, 6, 7	5, 6, 7	5, 6, 7
		NO <sub>x</sub>	1.80	3.96			
		PM	0.14	0.30			
		PM <sub>10</sub>	0.14	0.30			
		PM <sub>2.5</sub>	0.14	0.30			
		SO <sub>2</sub>	0.01	0.02			
		VOC	0.10	0.22			
120	Vapor Combustor (As backup control device, up to 1,314 hours per rolling 12-months)	Cl <sub>2</sub>	0.14	0.09	5, 6, 7, 19, 20, 21, 22, 25	5, 6, 7, 19, 20, 21, 22, 25	5, 6, 7
		CO	0.40	0.27			
		HCl	0.06	0.04			
		NO <sub>x</sub>	0.48	0.32			
		PM	0.04	0.02			
		PM <sub>10</sub>	0.04	0.02			
		PM <sub>2.5</sub>	0.04	0.02			
		SO <sub>2</sub>	0.01	0.01			
		VOC	22.22	3.41			

**Major NSR Summary Table**

Permit Numbers: 4802 and PSDTX1260					Issuance Date: 07/26/2018		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/ Application Information	Special Condition/ Application Information	Special Condition/ Application Information
128	Regenerator No. 2 Preheater (1,000 hours per rolling 12-months)	CO	2.07	1.03	8	8	
		NO <sub>x</sub>	2.46	1.23			
		PM	0.19	0.10			
		PM <sub>10</sub>	0.19	0.10			
		PM <sub>2.5</sub>	0.19	0.10			
		SO <sub>2</sub>	0.02	0.01			
		VOC	0.14	0.07			
170	Vapor Combustor 2 Standby Operation	CO	4.28	0.30	5, 27	5, 27	5, 27
		NO <sub>x</sub>	2.15	0.15			
		SO <sub>2</sub>	0.01	0.01			
		VOC	0.08	0.01			

**Major NSR Summary Table**

Permit Numbers: 4802 and PSDTX1260					Issuance Date: 07/26/2018		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/ Application Information	Special Condition/ Application Information	Special Condition/ Application Information
170	Vapor Combustor 2 (As backup control device, up to 1,314 hours per rolling 12-months)	Cl <sub>2</sub>	0.39	0.04	5, 14, 16, 17, 18, 25, 27	5, 14, 16, 17, 18, 25, 27	5, 27
		CO	15.30	5.06			
		HCl	1.99	0.19			
		NO <sub>x</sub>	1.78	0.59			
		SO <sub>2</sub>	1.91	0.18			
		VOC	12.23	1.19			
170	Vapor Combustor 2 (6) (Storage Tanks 48, 49, 53, and 56 Planned Inspection Purge)	CO	10.81	1.48	5, 22, 25, 27	5, 22, 25, 27	5, 27
		NO <sub>x</sub>	1.26	0.17			
		SO <sub>2</sub>	0.02	0.01			
		VOC	0.05	0.01			
CATSCNR2	Catalyst Screening for Regeneration Unit No. 2 Converter (6)	PM	0.01	0.01	22	22	
		PM <sub>10</sub>	0.01	0.01			
		PM <sub>2.5</sub>	0.01	0.01			
MSS-HAZTK1	Hazardous Waste Tanks (F2, and F3) and T554, Planned MSS Purge (6)	VOC	0.02	0.01	6, 7, 22	6, 7, 22	6, 7
MSS-HAZTK2	Hazardous Waste Tanks (B1, B2, H1, and H2) Planned MSS Purge (6)	VOC	0.01	0.01	5, 6, 7, 22	5, 6, 7, 22	5, 6, 7

**Major NSR Summary Table**

Permit Numbers: 4802 and PSDTX1260					Issuance Date: 07/26/2018		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/ Application Information	Special Condition/ Application Information	Special Condition/ Application Information
TKINSPMSS1	Tank 78 Planned Inspection Purge (6)	CO	3.04	0.75	22	22	
		C <sub>2</sub> H <sub>4</sub>	0.01	0.01			
		NO <sub>x</sub>	1.12	0.35			
		SO <sub>2</sub>	0.08	0.09			
		VOC (7)	0.05	0.06			
TKINSPMSS2	Tanks 48, 49, 53, and 56 Planned Inspection Purge (6)	CO	3.04	0.40	5, 22	5, 22	5
		C <sub>2</sub> H <sub>4</sub>	0.01	0.01			
		NO <sub>x</sub>	1.12	0.19			
		SO <sub>2</sub>	0.08	0.01			
		VOC (7)	0.05	0.01			
FE2	Process Fugitives (5)	SO <sub>2</sub>	0.05	0.20	23	23	
FE3	Process Fugitives (5)	SO <sub>2</sub>	0.01	0.03	23	23	
FE-12	Fugitives from HW Equipment (5)	VOC	0.04	0.19	6, 7, 24	6, 7, 24	6, 7
FE-13	Fugitives from HW Equipment (5)	VOC	0.02	0.10	6, 7, 24	6, 7, 24	6, 7
FE-14	Fugitives from HW Equipment (5)	VOC	0.01	0.01	6, 7, 24	6, 7, 24	6, 7

**Major NSR Summary Table**

Permit Numbers: 4802 and PSDTX1260					Issuance Date: 07/26/2018		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/ Application Information	Special Condition/ Application Information	Special Condition/ Application Information
FUG-SA1	Spent Acid Process Fugitives (5)	H <sub>2</sub> SO <sub>4</sub>	0.41	1.79	23	23	23
		SO <sub>2</sub>	0.12	0.37			
		VOC	0.09	0.35			
FUG-SA2	Spent Acid Process Fugitives (5)	H <sub>2</sub> SO <sub>4</sub>	0.07	0.31	23	23	23
		SO <sub>2</sub>	0.03	0.08			
		VOC	0.02	0.07			
FUG-SA3	Spent Acid Process Fugitives (5)	H <sub>2</sub> SO <sub>4</sub>	0.03	0.11	23	23	23
		SO <sub>2</sub>	0.06	0.18			
		VOC	0.03	0.08			
FUG-SA4	Spent Acid Process Fugitives (5)	H <sub>2</sub> SO <sub>4</sub>	0.30	1.34	23	23	23
		SO <sub>2</sub>	0.13	0.38			
		VOC	0.08	0.30			

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.

(2) Specific point source name. For fugitive sources, use area name or fugitive source name.

(3) C<sub>2</sub>H<sub>4</sub>

- ethylene

VOC

- volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1

H<sub>2</sub>SO<sub>4</sub>

- sulfuric acid

Cl<sub>2</sub>

- chlorine

NO<sub>x</sub>

- total oxides of nitrogen

SO<sub>2</sub>

- sulfur dioxide

- PM - total particulate matter, suspended in the atmosphere, including PM<sub>10</sub> and PM<sub>2.5</sub>, as represented
- PM<sub>10</sub> - total particulate matter equal to or less than 10 microns in diameter, including PM<sub>2.5</sub>, as represented
- PM<sub>2.5</sub> - particulate matter equal to or less than 2.5 microns in diameter
- CO - carbon monoxide
- HCl - hydrogen chloride

- (4) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period.
- (5) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.
- (6) Planned startup, shutdown and maintenance emissions
- (7) Ethylene emissions are not included in the VOC emission total.
- (8) PSDTX1260 pollutant





## Texas Commission on Environmental Quality Air Quality Permit

*A Permit Is Hereby Issued To*  
**Eco Services Operations Corp.**  
*Authorizing the Construction and Operation of*  
**Eco Services Operations**  
*Located at* **Houston, Harris County, Texas**  
*Latitude* 29° 43' 8" *Longitude* -95° 16' 16"

Permits: 19282 and PSDTX1081

Revision Date: June 20, 2016

Expiration Date: June 16, 2025

A handwritten signature in black ink, appearing to read "R. A. Hyle".

For the Commission

1. **Facilities** covered by this permit shall be constructed and operated as specified in the application for the permit. All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. Variations from these representations shall be unlawful unless the permit holder first makes application to the Texas Commission on Environmental Quality (commission) Executive Director to amend this permit in that regard and such amendment is approved. [Title 30 Texas Administrative Code (TAC) Section 116.116 (30 TAC § 116.116)]<sup>1</sup>
2. **Voiding of Permit.** A permit or permit amendment is automatically void if the holder fails to begin construction within 18 months of the date of issuance, discontinues construction for more than 18 months prior to completion, or fails to complete construction within a reasonable time. Upon request, the executive director may grant an 18-month extension. Before the extension is granted the permit may be subject to revision based on best available control technology, lowest achievable emission rate, and netting or offsets as applicable. One additional extension of up to 18 months may be granted if the permit holder demonstrates that emissions from the facility will comply with all rules and regulations of the commission, the intent of the Texas Clean Air Act (TCAA), including protection of the public's health and physical property; and (b)(1) the permit holder is a party to litigation not of the permit holder's initiation regarding the issuance of the permit; or (b)(2) the permit holder has spent, or committed to spend, at least 10 percent of the estimated total cost of the project up to a maximum of \$5 million. A permit holder granted an extension under subsection (b)(1) of this section may receive one subsequent extension if the permit holder meets the conditions of subsection (b)(2) of this section. [30 TAC § 116.120]
3. **Construction Progress.** Start of construction, construction interruptions exceeding 45 days, and completion of construction shall be reported to the appropriate regional office of the commission not later than 15 working days after occurrence of the event. [30 TAC § 116.115(b)(2)(A)]
4. **Start-up Notification.** The appropriate air program regional office shall be notified prior to the commencement of operations of the facilities authorized by the permit in such a manner that a representative of the commission may be present. The permit holder shall provide a separate notification for the commencement of operations for each unit of phased construction, which may involve a series of units commencing operations at different times. Prior to operation of the facilities authorized by the permit, the permit holder shall identify the source or sources of allowances to be utilized for compliance with Chapter 101, Subchapter H, Division 3 of this title (relating to Mass Emissions Cap and Trade Program). [30 TAC § 116.115(b)(2)(B)]
5. **Sampling Requirements.** If sampling is required, the permit holder shall contact the commission's Office of Compliance and Enforcement prior to sampling to obtain the proper data forms and procedures. All sampling and testing procedures must be approved by the executive director and coordinated with the regional representatives of the commission. The permit holder is also responsible for providing sampling

facilities and conducting the sampling operations or contracting with an independent sampling consultant. [30 TAC § 116.115(b)(2)(C)]

6. **Equivalency of Methods.** The permit holder must demonstrate or otherwise justify the equivalency of emission control methods, sampling or other emission testing methods, and monitoring methods proposed as alternatives to methods indicated in the conditions of the permit. Alternative methods shall be applied for in writing and must be reviewed and approved by the executive director prior to their use in fulfilling any requirements of the permit. [30 TAC § 116.115(b)(2)(D)]
7. **Recordkeeping.** The permit holder shall maintain a copy of the permit along with records containing the information and data sufficient to demonstrate compliance with the permit, including production records and operating hours; keep all required records in a file at the plant site. If, however, the facility normally operates unattended, records shall be maintained at the nearest staffed location within Texas specified in the application; make the records available at the request of personnel from the commission or any air pollution control program having jurisdiction in a timely manner; comply with any additional recordkeeping requirements specified in special conditions in the permit; and retain information in the file for at least two years following the date that the information or data is obtained. [30 TAC § 116.115(b)(2)(E)]
8. **Maximum Allowable Emission Rates.** The total emissions of air contaminants from any of the sources of emissions must not exceed the values stated on the table attached to the permit entitled “Emission Sources--Maximum Allowable Emission Rates.” [30 TAC § 116.115(b)(2)(F)]<sup>1</sup>
9. **Maintenance of Emission Control.** The permitted facilities shall not be operated unless all air pollution emission capture and abatement equipment is maintained in good working order and operating properly during normal facility operations. The permit holder shall provide notification in accordance with 30 TAC §101.201, 101.211, and 101.221 of this title (relating to Emissions Event Reporting and Recordkeeping Requirements; Scheduled Maintenance, Startup, and Shutdown Reporting and Recordkeeping Requirements; and Operational Requirements). [30 TAC§ 116.115(b)(2)(G)]
10. **Compliance with Rules.** Acceptance of a permit by an applicant constitutes an acknowledgment and agreement that the permit holder will comply with all rules and orders of the commission issued in conformity with the TCAA and the conditions precedent to the granting of the permit. If more than one state or federal rule or regulation or permit condition is applicable, the most stringent limit or condition shall govern and be the standard by which compliance shall be demonstrated. Acceptance includes consent to the entrance of commission employees and agents into the permitted premises at reasonable times to investigate conditions relating to the emission or concentration of air contaminants, including compliance with the permit. [30 TAC § 116.115(b)(2)(H)]
11. **This** permit may not be transferred, assigned, or conveyed by the holder except as provided by rule. [30 TAC § 116.110(e)]
12. **There** may be additional special conditions attached to a permit upon issuance or modification of the permit. Such conditions in a permit may be more restrictive than the requirements of Title 30 of the Texas Administrative Code. [30 TAC § 116.115(c)]
13. **Emissions** from this facility must not cause or contribute to “air pollution” as defined in Texas Health and Safety Code (THSC) §382.003(3) or violate THSC § 382.085. If the executive director determines that such a condition or violation occurs, the holder shall implement additional abatement measures as necessary to control or prevent the condition or violation.
14. **The** permit holder shall comply with all the requirements of this permit. Emissions that exceed the limits of this permit are not authorized and are violations of this permit.<sup>1</sup>

<sup>1</sup> Please be advised that the requirements of this provision of the general conditions may not be applicable to greenhouse gas emissions.

## SPECIAL CONDITIONS

Permit Numbers 19282 and PSDTX1081

Page 1

## SPECIAL CONDITIONS

Permit Numbers 19282 and PSDTX1081

### Emission Standards

1. This permit authorizes emissions only from those points listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates," and the facilities covered by this permit are authorized to emit subject to the emission rate limits on that table and other operating conditions specified in this permit.
2. Sulfur dioxide (SO<sub>2</sub>) emissions limits will be limited to the following emission rates: **(06/16)**  
Short term - 3.00 pounds of SO<sub>2</sub> per ton of one hundred percent acid produced.  
Long term - 1.70 pounds of SO<sub>2</sub> per ton of one hundred percent acid produced.

These values correlate to hourly and yearly SO<sub>2</sub> emission rates found in the maximum allowable emissions rates table (MAERT) from Emission Point Number (EPN) 101. **(PSD) (01/08)**

These facilities shall comply with all applicable requirements shall comply with all applicable requirements of EPA regulations on Standards of Performance for New Stationary Sources promulgated for the following: **(11/11)**

- A. Emission Guidelines and Compliance Times for Sulfuric Acid Production Units in 40 CFR Part 60, Subparts A and Cd, and
- B. Sulfuric Acid Plants in 40 CFR Part 60, Subparts A and H.

The sulfur acid mist (H<sub>2</sub>SO<sub>4</sub>) mist limits are limited to 0.15 pound per ton of H<sub>2</sub>SO<sub>4</sub> EPN 101. SO<sub>2</sub> and H<sub>2</sub>SO<sub>4</sub> mist emission limits effective on and after July 1, 2009 shall never be relaxed. **(PSD) (12/07)**

Natural gas use for furnace heat ups are limited to 150 hours per rolling 12 months at a maximum hourly fired duty of 50 MMBtu and shall be emitted through EPNs 103, 105 and 106. Records shall be kept at the plant site and updated once every six months to demonstrate compliance with this representation. Records shall be made readily available to Texas Commission on Environmental Quality (TCEQ) personnel upon request, the U.S. Environmental Protection Agency (EPA) personnel or any applicable local program with jurisdiction. **(11/11)**

## SPECIAL CONDITIONS

Permit Numbers 19282 and PSDTX1081

Page 2

3. H<sub>2</sub>SO<sub>4</sub> production is limited to 2,600 tons per day. The holder of this permit shall keep records of the daily production of H<sub>2</sub>SO<sub>4</sub>. Records shall be made readily available to TCEQ personnel upon request, EPA personnel or any applicable local program with jurisdiction and may be used to determine compliance with the SO<sub>2</sub> emissions limitations specified in the MAERT. **(PSD) (04/10)**
4. Piping, Valves, Flanges, Connectors, Pumps and Compressors in Gaseous and Liquid Sulfur Dioxide (SO<sub>2</sub>) Service (12/07)
  - A. Audio, olfactory and visual checks for gas and liquid SO<sub>2</sub> leaks within the operating area shall be made once every shift. This special condition will apply upon start-up of the represented increase in H<sub>2</sub>SO<sub>4</sub> production from the October 2006 amendment submittal.
  - B. Process gas leaks shall be addressed upon detection of a gaseous SO<sub>2</sub> leak by plant personnel who shall take the following actions:
    - (1) Locate and determine the extent of the process gas leak.
    - (2) Commence to make repairs to the gas leak.
    - (3) Use a leak collection/containment system to prevent the leak until repair or replacement can be made if immediate repair is not possible.
  - C. Liquid leaks found in damaged or leaking valves, connectors and pump seals in the SO<sub>2</sub> scrubber authorized in the October 2006 amendment submittal found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Every reasonable effort shall be made to repair or replace a leaking component as specified in this paragraph within 15 days after the leak is found. If the repair of a component would require a unit shutdown, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. At the discretion of the TCEQ Executive Director or designated representative, early unit shutdown or other appropriate action may be required based on the number and severity of tagged leaks awaiting shutdown.
  - D. Date and time of each inspection shall be noted in the operator's log or equivalent. Records shall be maintained at the plant site of all repairs and replacements made due to leaks. These records shall be made readily available to representatives of the TCEQ or any local program with jurisdiction upon request.

## SPECIAL CONDITIONS

Permit Numbers 19282 and PSDTX1081

Page 3

### Initial Determination of Compliance

5. The holder of this permit shall perform stack sampling and other testing as required to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from the Unit No. 8 Stack designated as EPN 101. The holder of this permit is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense. **(PSD) (07/07)**

## SPECIAL CONDITIONS

Permit Numbers 19282 and PSDTX1081

Page 4

- A. Sampling shall be conducted in accordance with Title 40 Code of Federal Regulations (40 CFR) Part 60, Appendix A, Method 7, "Determination of Nitrogen Oxide (NO<sub>x</sub>) Emissions from Stationary Sources" and Method 8, "Determination of SO<sub>2</sub> and H<sub>2</sub>SO<sub>4</sub> Emissions from Stationary Sources" and Method 10, "Determination of Carbon Monoxide (CO) Emissions from Stationary Sources" and other applicable testing methods.
- B. The appropriate TCEQ Regional Office in the region where the source is located and applicable local air program(s) shall be contacted as soon as testing is scheduled, but not less than 45 days prior to sampling to schedule a pretest meeting.

The notice shall include:

- (1) Date for pretest meeting.
- (2) Date sampling will occur.
- (3) Name of firm conducting sampling.
- (4) Type of sampling equipment to be used.
- (5) Method or procedure to be used in sampling.

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for submitting the test reports.

A written proposed description of any deviation from sampling procedures specified in permit provision or the TCEQ or EPA sampling procedures shall be made available to the TCEQ prior to the pretest meeting. The TCEQ Regional Director shall approve or disapprove of any deviation from specified sampling procedures.

Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Office of Air, Air Permits Division. Test waivers and alternate/equivalent procedure proposals for New Source Performance Standard testing which must have EPA approval shall be submitted to the TCEQ Field Operations Division in Austin.

- C. Air contaminants emitted from the Unit No. 8 Stack to be tested for include chlorine, SO<sub>2</sub>, H<sub>2</sub>SO<sub>4</sub> mist, CO, NO<sub>x</sub>, antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, nickel, selenium, silver and thallium. These stack testing results shall be used to demonstrate compliance with Special Condition Nos. 1 and 2.

- D. Sampling shall occur at such other times as may be required by the Executive Director of the TCEQ. Requests for additional time to perform sampling shall be submitted to the TCEQ Regional Office. Additional time to comply with the applicable requirements of 40 CFR Part 60 and 40 CFR Part 61 requires prior approval and requests shall be submitted to the TCEQ Field Operations Division in Austin.
- E. The sulfuric acid plant shall be sampled while operating at the maximum possible safe production rate (as determined by the permittee) for the H<sub>2</sub>SO<sub>4</sub> unit at the time of testing. The H<sub>2</sub>SO<sub>4</sub> production rate shall be monitored and recorded during the stack test. If the normal production rate of H<sub>2</sub>SO<sub>4</sub> from this facility exceeds by more than 10 percent the tons per day maintained during sampling, the company must notify, in writing, the appropriate TCEQ Regional Office, and the source may be subject to additional sampling to demonstrate continued compliance.
- F. Sampling reports shall comply with the attached conditions of Chapter 14 of the TCEQ Sampling Procedures Manual. The final sampling report shall be forwarded to the following within sixty days after sampling is completed:

One copy to the TCEQ Houston Regional Office.

One copy to each appropriate local air pollution control program.

One copy to the EPA Region 6 New Source Review Section in Dallas.

#### Continuous Determination of Compliance

- 6. The holder of this permit shall install, calibrate, maintain and operate a continuous emission monitoring system (CEMS) to measure and record the in-stack concentration of SO<sub>2</sub> and the total gas flow rate from the Unit No. 8 Stack (EPN 101).
  - A. The CEMS calibration shall be checked daily and the CEMS shall be zeroed and spanned using cylinder gas at least once a week and corrective action taken when the results differ by greater than  $\pm 5$  percent from the tagged cylinder gas value.
  - B. The monitoring data shall be reduced to one-hour average concentrations at least once every month using a minimum of four equally-spaced data points from each one-hour period. The individual average concentrations shall be reduced to units of the permit allowable emissions rates in pounds of SO<sub>2</sub> per hour at least once every month.

## SPECIAL CONDITIONS

Permit Numbers 19282 and PSDTX1081

Page 5

- C. All monitoring data and quality-assurance data shall be maintained by the source for a period of two years and shall be made readily available to TCEQ personnel, EPA personnel or any local program with jurisdiction upon request. The data from the CEMS may, at the discretion of the TCEQ, EPA personnel or any local program with jurisdiction, be used to determine compliance with the SO<sub>2</sub> emission limits specified in MAERT.
- D. The CEMS must operate at all times when sulfur bearing compounds (except natural gas) are being fed to the furnace, but need not operate during CEMS breakdown, repairs for calibration checks and zero span adjustments. **(12/07)**
- E. CEMS shall be used to demonstrate compliance with the SO<sub>2</sub> emission limits as found in Special Condition No. 2. The permit holder must meet the quality assurance procedures required by 40 CFR Part 60 Appendix F or any alternate procedures specified in the Alternate Monitoring Plan (AMP) (Attachment A). **(12/07)**
  - (1) The SO<sub>2</sub>CEMS shall monitor and record the three hour arithmetic average (not weighted by production volume) SO<sub>2</sub> emission rate in units of pounds per ton of one hundred percent acid produced.
  - (2) The SO<sub>2</sub> CEMS shall monitor and record the SO<sub>2</sub> emission rate averaged (arithmetic average, not weighted by production) over all operation hours in each 365 day period in units of pounds per ton of one hundred percent acid produced.
  - (3) Implementation of the monitoring requirements has been defined in the AMP for the SO<sub>2</sub> CEMS system.
  - (4) The AMP supersedes the corresponding SO<sub>2</sub> monitoring requirements of NSPS Subpart H.
  - (5) All steps necessary to avoid CEMS breakdowns and minimize CEMS down time must be taken. This shall include, but is not limited to, operating and maintaining the CEMS in accordance with best practices and maintaining an on-site inventory of spare parts or other supplies necessary to make rapid repairs of the equipment.
  - (6) In the event of a CEMS downtime lasting longer than twenty-four hours, the permittee shall demonstrate compliance with the emission limits established in Special Condition No. 2 according to the procedures specified in the AMP.



## SPECIAL CONDITIONS

Permit Numbers 19282 and PSDTX1081

Page 6

7. The minimum liquid flow to the second stage of the absorber shall be 600 gallons per minute (gpm). The circulation rate shall be monitored and recorded at least once a day. **(11/11)**

The liquid flow rate shall be recorded at least once an hour.

The flow monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications, or at least annually, whichever is more frequent, and shall be accurate to within 2 percent of span or 5 percent of the design value.

The minimum pH of the scrubbing solution downstream of the Brinks mist filter is 5.0. This pH shall be analyzed and recorded at least once a day.

Each monitoring device shall be cleaned with an automatic cleaning system, or cleaned weekly using hydraulic, chemical or mechanical cleaning. Each monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications, or at least weekly, whichever is more frequent, and shall be accurate to within 0.5 pH unit.

Quality-assured (or valid) data must be generated when the facility generating emissions are operating except during the performance of a daily zero and span check. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in hours) that the facility generating emissions operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgement and the methods used recorded.

8. The following requirements apply to capture systems for EPN 101. **(07/07)**
  - A. The permit holder shall conduct a once a month visual, audible, and/or olfactory inspection of the capture system to verify there are no leaking components in the capture system;
  - B. The control device shall not have a bypass.
  - C. If any of the above inspections are not satisfactory, the permit holder shall promptly take necessary corrective action.

## SPECIAL CONDITIONS

Permit Numbers 19282 and PSDTX1081

Page 7

### Planned Maintenance, Startup and Shutdown

9. Catalyst converter planned MSS activity is limited to 512 hours per rolling twelve months from EPN CATSCNU8. Planned MSS generated particulate emissions shall be directed to a bag filter. Outlet bag filter grain loading shall be limited to a maximum of 0.01 grains per dry standard cubic foot. **(11/11)**

Only these planned MSS activities described in this condition are authorized by this permit. These emissions are subject to the maximum allowable emission rates indicated on the maintenance, start-up, and shutdown (MAERT). The performance of each planned maintenance activity and emissions associated with it shall be recorded and the rolling 12-month emissions shall be updated on a monthly basis. These records shall include at least the following information: **(11/11)**

- (1) The physical location at which emissions from the planned MSS activity occurred, including the emission point number, common name, and any other identifier for the point at which the emissions were released into the atmosphere;
- (2) The type of planned MSS activity and the reason for the planned activity;
- (3) The common name and the facility identification number of the facilities at which the planned MSS activity and emissions occurred;
- (4) The date and time of the planned MSS activity and its duration;
- (5) The estimated quantity of each air contaminant, or mixture of air contaminants, emitted with the data and methods used to determine it. The emissions shall be estimated using the methods identified in the amendment application, PI-1 dated July 28, 2011, consistent with good engineering practice.

Dated November 22, 2011

## **ATTACHMENT A**

### **Alternative Monitoring Plan for SO<sub>2</sub> Emissions Eco Services Operations Corp. Houston, Texas Unit 8 Single Absorption Sulfuric Acid Plant with Scrubber**

#### **Justification for Using an Alternative Monitoring Plan (AMP) for SO<sub>2</sub> emissions**

Sulfur dioxide emissions from the Houston 8 sulfuric acid unit will be monitored in accordance with the requirements of the existing NSPS for sulfuric acid plants except as noted in this AMP. The CEMS will demonstrate compliance on a real-time basis with the SO<sub>2</sub> emissions standard (as lbs of SO<sub>2</sub> per ton of 100% sulfuric acid produced) using stack SO<sub>2</sub> and O<sub>2</sub> analyzers. The purpose of this AMP is to document the calculation methods that will be utilized to demonstrate compliance with regulations as modified by the Consent Decree.

#### **Definitions**

"CEMS" or "Continuous Emission Monitoring System" shall mean equipment that continuously measures and records the concentration and/or emission rate of a pollutant, in the units specified by the emission limit concerned.

"Long-Term Limit" shall mean a sulfur dioxide (SO<sub>2</sub>) emission limit for a sulfuric acid plant expressed as pounds per ton of 100% sulfuric acid produced ("lbs/ton"), averaged over all Operating Hours in a rolling 365-day period.

"Malfunction" shall mean, consistent with 40 C.F.R. § 60.2, any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner, but shall not include failures that are caused in part by poor maintenance or careless operation.

"Operating Hours" shall mean periods during which sulfur or sulfur-bearing compounds, excluding conventional fossil fuels such as natural gas or fuel oil, are being fed to the furnace.

"Short-Term Limit" shall mean the SO<sub>2</sub> emission limit for each sulfuric acid plant expressed as pounds per ton of 100% sulfuric acid produced ("lbs/ton"), averaged over each rolling 3-hour period. Except for periods of Startup, Shutdown and Malfunction, the Short-Term Limits established under this Consent Decree shall apply at all times.

"Shutdown" shall mean the cessation of operation of a sulfuric acid plant for any reason. Shutdown begins at the time sulfur or sulfur-bearing feeds, excluding conventional fossil fuels such as natural gas or fuel oil, to the furnace ceases.

“Startup” shall mean the 24-hour period at any sulfuric acid plant beginning when the feed of sulfur or sulfur-bearing materials, excluding conventional fossil fuels such as natural gas or fuel oil, to the furnace commences after a main gas blower shutdown.

**Part 60.84 Emissions Monitoring.**

Compliance with the Long-Term Limit and Short-Term Limit defined by the Consent Decree will be demonstrated using SO<sub>2</sub> and O<sub>2</sub> analyzers at the exit stack using the following equation. Refer to additional discussion below the equation for specific details related to data input and calculation.

Equation 1

$$Xe = (0.209 - MO_2 - MSO_2) / (0.209 - MO_2 + 0.186 \times MSO_2)$$

$$E = (K / Xe) - K$$

Where:

Xe = fractional conversion efficiency

MO<sub>2</sub> = fractional concentration of O<sub>2</sub> at the stack, dry basis

MSO<sub>2</sub> = fractional concentration of SO<sub>2</sub> at the stack, dry basis

E = SO<sub>2</sub> emission rate in lb / ton of 100 % acid produced

K = 1306 = (2000 lb / ton ) x (64 lb / lbmol SO<sub>2</sub>)/(98 lb / lbmol H<sub>2</sub>SO<sub>4</sub>)

Short-Term Limit

The following procedure and calculation will be performed once every five minutes during all Operating Hours, except periods of Startup, Shutdown or Malfunction, to demonstrate compliance with the Short-Term Limit for SO<sub>2</sub>.

- At any given time the system will maintain an array consisting of the 36 most recent samples of the O<sub>2</sub> and SO<sub>2</sub> concentrations at the exit stack.
- Once every five minutes, the system will sample the latest O<sub>2</sub> and SO<sub>2</sub> concentrations, add the recent readings to the array and delete the oldest readings. If the unit is not operating then the array of data will not change.
- MO<sub>2</sub><sub>3hravg</sub> will then be calculated as the arithmetic average of the 36 most recent data samples for the fractional concentration of O<sub>2</sub> at the stack (MO<sub>2</sub><sub>3hravg</sub>).

## ATTACHMENT A

Permit Numbers 19282 and PSDTX1081

Page 3

- $MSO_{2\text{hravg}}$  will then be calculated as the arithmetic average of the 36 most recent data samples for the fractional concentration of  $SO_2$  at the stack ( $MSO_{2\text{hravg}}$ ).
- The rolling 3 hour average  $SO_2$  emissions ( $E_{3\text{hravg}}$ ) will then be calculated per Equation 2.

Equation 2 (rolling 3 hour average  $SO_2$  emissions)

$$Xe_{3\text{hravg}} = (0.209 - MO_{2\text{hravg}} - MSO_{2\text{hravg}}) / (0.209 - MO_{2\text{hravg}} + 0.186 \times MSO_{2\text{hravg}})$$

$$E_{3\text{hravg}} = (K / Xe_{3\text{hravg}}) - K$$

- The production unit will be deemed to be operating in compliance with the Short Term Limit if  $E_{3\text{hr-avg}}$  does not exceed 3.0 lb of  $SO_2$  per ton of 100% sulfuric acid produced during all Operating Hours except periods of Startup, Shutdown or Malfunction.

During routine calibration checks and adjustments of the  $O_2$  or  $SO_2$  monitors, the  $O_2$  or  $SO_2$  measurement will be “frozen” at its pre-calibration level. Refer to System Maintenance and Malfunction for guidance during CEMS malfunctions, breakdowns, and repairs.

### Long-Term Limit

The following method will be used to calculate the daily average lb of  $SO_2$  per ton of 100% sulfuric acid, and the number of Operating Hours for the calendar day.

- Once every five minutes during all Operating Hours, the  $O_2$  and  $SO_2$  concentrations at the exit stack will be sampled and this time will be counted as five operating minutes. If the unit is not operating, then the  $O_2$  and  $SO_2$  concentrations will not be sampled.
- The daily average will be calculated as follows for each calendar day:
  - o  $MO_{2\text{daily avg}}$  will be calculated as the arithmetic average of the sample population for the fractional concentration of  $O_2$  at the stack.
  - o  $MSO_{2\text{daily avg}}$  will be calculated as the arithmetic average of the sample population for the fractional concentration of  $SO_2$  at the stack
  - o  $E_{(\text{daily avg})}$  will then be calculated using Equation 3.

Equation 3 (daily average  $SO_2$  emissions)

$$Xe_{\text{daily avg}} = (0.209 - MO_{2\text{daily avg}} - MSO_{2\text{daily avg}}) / (0.209 - MO_{2\text{daily avg}} + 0.186 \times MSO_{2\text{daily avg}})$$

$$E_{\text{daily avg}} = (K / Xe_{\text{daily avg}}) - K$$

- The number of operating minutes for the day will be summed ( $T_{\text{day}}$ , )
- $E_{\text{dayavg}}$  and  $T_{\text{day}}$  will be used to calculate a 365-day rolling average of lb/ton. The daily averages will be weighted by the number of operating minutes per day, as per Equation 4.

Once the system has been in operation for 365 days, compliance with the Long Term Limit (365-day rolling average)  $\text{SO}_2$  emission rate will be calculated using Equation 4.

Equation 4

$$E_{365\text{avg}} = \frac{\sum [E_{\text{dayavg}} * T_{\text{day}}]}{\sum T_{\text{day}}}$$

The production unit will be deemed to be operating in compliance with the Long-Term Limit if  $E_{365\text{avg}}$  does not exceed 1.7 lb of  $\text{SO}_2$  per ton of 100% sulfuric acid produced during all Operating Hours

During routine calibration checks and adjustments of the  $\text{O}_2$  or  $\text{SO}_2$  monitors, the  $\text{O}_2$  or  $\text{SO}_2$  measurement will be “frozen” at its pre-calibration level. Refer to System Maintenance and Malfunction for guidance during CEMS malfunction, breakdowns, and repairs:

**Pt. 60.84 Emissions Monitoring Pt. 60, App. B, Spec. 2, Section 6.0 (Stack Analyzers)**

Rhodia proposes to use the following stack analyzer specifications to satisfy the requirements of Pt. 60.84 and Pt. 60, App. B, Spec. 2, Section 6.0. The stack analyzer span must be capable of accommodating elevated emissions during startup.

An equivalent analyzer may be substituted for any reason.

Location	Manufacturer	Model Number	Range
Stack $\text{SO}_2$	Ametek Photometric Analyzer (or equivalent)	920 (or equivalent)	Dual range: Normal: 0 – 500 ppm $\text{SO}_2$ SSM: 0 – 3,600 ppm $\text{SO}_2$
Stack $\text{O}_2$	Ametek Oxygen Analyzer (or equivalent)	920 (or equivalent)	Single range: 0 – 20.9 % $\text{O}_2$

**Pt. 60, App. B, Spec. 2, Section 1.0 (Stack Analyzers)**

Initial compliance certification required only if the analyzer is replaced or if system modifications require one to be performed. Additional detail and exceptions noted below under System Modifications below.

**System Maintenance and Malfunction**

Except for monitoring malfunctions, associated repairs, and required quality assurance or control activities (including calibration checks and required zero and span adjustments), the plant shall conduct monitoring in continuous operation during all Operating Hours as defined above

In the event of a CEMS malfunction of greater than 24 hours:

- SO<sub>2</sub> in the exit stack gas will be sampled and analyzed at least once per hour, during all Operating Hours. Sampling will be conducted by Reich test or other method (e.g. portable analyzer).
- O<sub>2</sub> in the exit stack gas will be sampled and analyzed at least once per hour, during all Operating Hours. Sampling will be conducted by Orsat test or other method (e.g. portable analyzer)
- Compliance with the Short-Term Limit and Long-Term Limit shall be verified by using these data and Equations 2, 3, and 4 with the following exception. Given that one or both of the stack CEMS is out of service, the most recent hourly reading(s) will be substituted for the 12 (24) five-minute readings that would otherwise be taken if the system was operating normally

In the event of an analyzer malfunction, a like-kind replacement may be used while repairs are being made. A cylinder gas audit (CGA) must be performed on the replacement analyzer as soon as is practicable after it is placed in service. The daily calibration drift requirement would also apply to the replacement analyzer.

**System Modifications**

Significant replacement, modification, or change in certified CEMS equipment may require a complete recertification. If a recertification is required, it will be conducted within 90 days. Examples include:

- Change in location or orientation of the sampling probe or site
- Complete replacement of an existing continuous emission monitoring system.

When replacing components that can alter the physical characteristics or conditioning of the sample in the field, a CGA is required. The following activities will require a CGA to be performed before returning the analyzer to service.

- Replacement of the analyzer
- Detector replacement
- Replacement of equipment associated with the detector

The following activities are not expected to trigger a CGA. However, it is recommended that a Calibration Drift check be performed before returning to service.

- Filter replacement
- Data Recorder Repairs
- Tubing replacement

General guidance: When replacing components or devices that do not affect the physical characteristics or handling of the gas in the field such as data recorders, a CGA is not required. A calibration drift check normally should be conducted. If the repaired component affects the transport of the gas to the analyzer, such as replacing tubing, a leak check should be conducted.

Dated November 22, 2011



# Emission Sources - Maximum Allowable Emission Rates

Permit Number 19282

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities, sources, and related activities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

## Air Contaminants Data

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
101	Unit No. 8 Stack	CO	1.75	7.65
		H <sub>2</sub> SO <sub>4</sub> (7)	13.00	56.94
		NO <sub>x</sub>	9.75	42.7
		PM	3.36	14.72
		PM <sub>10</sub>	3.36	14.72
		PM <sub>2.5</sub>	3.36	14.72
		SO <sub>2</sub>	325.00	724.20
		Ag	0.022	0.095
		As	0.068	0.297
		Ba	0.023	0.099
		Be	0.014	0.063
		Cd	0.014	0.063
		Cl <sub>2</sub>	0.721	3.159
		Cr	0.077	0.337
		Hg	0.0004	0.002
		Ni	0.061	0.267
		Pb	0.032	0.141
		Sb	0.037	0.158
		Se	0.044	0.192
		Tl	0.014	0.063

## Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
102	Acid Pump Tank	SO <sub>2</sub>	0.01	0.01
103	Natural Gas Start Up Vent (9)	CO	4.12	
		NO <sub>x</sub>	4.90	
		PM	0.37	
		PM <sub>10</sub>	0.37	
		PM <sub>2.5</sub>	0.37	
		SO <sub>2</sub>	0.03	
		VOC	0.27	
105	Natural Gas Start Up Vent (9)	CO	4.12	
		NO <sub>x</sub>	4.90	
		PM	0.37	
		PM <sub>10</sub>	0.37	
		PM <sub>2.5</sub>	0.37	
		SO <sub>2</sub>	0.03	
		VOC	0.27	
106	Natural Gas Start Up Vent (9)	CO	4.12	
		NO <sub>x</sub>	4.90	
		PM	0.37	
		PM <sub>10</sub>	0.37	
		PM <sub>2.5</sub>	0.37	
		SO <sub>2</sub>	0.03	
		VOC	0.27	
		CO		0.31

## Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
	Annual Emission Cap (6) (EPNs 103, 105 and 106)	NO <sub>x</sub>		0.37
		PM		0.03
		PM <sub>10</sub>		0.03
		PM <sub>2.5</sub>		0.03
		SO <sub>2</sub>		0.01
		VOC		0.02
CATSCNU8	Catalyst Screening (8)	PM	0.01	0.01
		PM <sub>10</sub>	0.01	0.01
		PM <sub>2.5</sub>	0.01	0.01
FE1	Process Fugitives (5)	SO <sub>2</sub>	0.01	0.03

- (1) Emission point identification - either specific equipment designation or emission point number from plot plan.
- (2) Specific point source name. For fugitive sources, use area name or fugitive source name.
- (3) Exempt Solvent - Those carbon compounds or mixtures of carbon compounds used as solvents which have been excluded from the definition of volatile organic compound.
- VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
  - HRVOC - highly reactive volatile organic compounds as defined in 30 TAC § 115.10
  - IOC-U - inorganic compounds (unspeciated)
  - NO<sub>x</sub> - total oxides of nitrogen
  - SO<sub>2</sub> - sulfur dioxide
  - PM - total particulate matter, suspended in the atmosphere, including PM<sub>10</sub> and PM<sub>2.5</sub>, as represented
  - PM<sub>10</sub> - total particulate matter equal to or less than 10 microns in diameter, including PM<sub>2.5</sub>, as represented
  - PM<sub>2.5</sub> - particulate matter equal to or less than 2.5 microns in diameter
  - CO - carbon monoxide
  - HAP - hazardous air pollutant as listed in § 112(b) of the Federal Clean Air Act or Title 40 Code of Federal Regulations Part 63, Subpart C
- (4) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period.
- (5) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.

Date: September 14, 2012



## Texas Commission on Environmental Quality Air Quality Permit

*A Permit Is Hereby Issued To*  
**Eco Services Operations Corp.**  
*Authorizing the Continued Operation of*  
**Sulfuric Acid Regeneration Unit 2**  
*Located at* **Houston, Harris County, Texas**  
*Latitude* 29° 43' 20" *Longitude* -95° 16' 20"

Permit: 4802 and PSDTX1260

Issuance Date: July 26, 2018

Expiration Date: July 26, 2028

  
For the Commission

1. **Facilities** covered by this permit shall be constructed and operated as specified in the application for the permit. All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. Variations from these representations shall be unlawful unless the permit holder first makes application to the Texas Commission on Environmental Quality (commission) Executive Director to amend this permit in that regard and such amendment is approved. [Title 30 Texas Administrative Code (TAC) Section 116.116 (30 TAC § 116.116)]<sup>1</sup>
2. **Voiding of Permit.** A permit or permit amendment is automatically void if the holder fails to begin construction within 18 months of the date of issuance, discontinues construction for more than 18 months prior to completion, or fails to complete construction within a reasonable time. Upon request, the executive director may grant an 18-month extension. Before the extension is granted the permit may be subject to revision based on best available control technology, lowest achievable emission rate, and netting or offsets as applicable. One additional extension of up to 18 months may be granted if the permit holder demonstrates that emissions from the facility will comply with all rules and regulations of the commission, the intent of the Texas Clean Air Act (TCAA), including protection of the public's health and physical property; and (b)(1) the permit holder is a party to litigation not of the permit holder's initiation regarding the issuance of the permit; or (b)(2) the permit holder has spent, or committed to spend, at least 10 percent of the estimated total cost of the project up to a maximum of \$5 million. A permit holder granted an extension under subsection (b)(1) of this section may receive one subsequent extension if the permit holder meets the conditions of subsection (b)(2) of this section. [30 TAC § 116.120]
3. **Construction Progress.** Start of construction, construction interruptions exceeding 45 days, and completion of construction shall be reported to the appropriate regional office of the commission not later than 15 working days after occurrence of the event. [30 TAC § 116.115(b)(2)(A)]
4. **Start-up Notification.** The appropriate air program regional office shall be notified prior to the commencement of operations of the facilities authorized by the permit in such a manner that a representative of the commission may be present. The permit holder shall provide a separate notification for the commencement of operations for each unit of phased construction, which may involve a series of units commencing operations at different times. Prior to operation of the facilities authorized by the permit, the permit holder shall identify the source or sources of allowances to be utilized for compliance with Chapter 101, Subchapter H, Division 3 of this title (relating to Mass Emissions Cap and Trade Program). [30 TAC § 116.115(b)(2)(B)]
5. **Sampling Requirements.** If sampling is required, the permit holder shall contact the commission's Office of Compliance and Enforcement prior to sampling to obtain the proper data forms and procedures. All sampling and testing procedures must be approved by the executive director and coordinated with the regional representatives of the commission. The permit holder is also responsible for providing sampling facilities and conducting the sampling operations or contracting with an independent sampling consultant. [30 TAC § 116.115(b)(2)(C)]
6. **Equivalency of Methods.** The permit holder must demonstrate or otherwise justify the equivalency of emission control methods, sampling or other emission testing methods, and monitoring methods proposed as alternatives to methods indicated in the conditions of the permit. Alternative methods shall be applied for in writing and must be reviewed and approved by the executive director prior to their use in fulfilling any requirements of the permit. [30 TAC § 116.115(b)(2)(D)]
7. **Recordkeeping.** The permit holder shall maintain a copy of the permit along with records containing the information and data sufficient to demonstrate compliance with the permit, including production records and

operating hours; keep all required records in a file at the plant site. If, however, the facility normally operates unattended, records shall be maintained at the nearest staffed location within Texas specified in the application; make the records available at the request of personnel from the commission or any air pollution control program having jurisdiction in a timely manner; comply with any additional recordkeeping requirements specified in special conditions in the permit; and retain information in the file for at least two years following the date that the information or data is obtained. [30 TAC § 116.115(b)(2)(E)]

8. **Maximum Allowable Emission Rates.** The total emissions of air contaminants from any of the sources of emissions must not exceed the values stated on the table attached to the permit entitled "Emission Sources-- Maximum Allowable Emission Rates." [30 TAC § 116.115(b)(2)(F)] <sup>1</sup>
9. **Maintenance of Emission Control.** The permitted facilities shall not be operated unless all air pollution emission capture and abatement equipment is maintained in good working order and operating properly during normal facility operations. The permit holder shall provide notification in accordance with 30 TAC §101.201, 101.211, and 101.221 of this title (relating to Emissions Event Reporting and Recordkeeping Requirements; Scheduled Maintenance, Startup, and Shutdown Reporting and Recordkeeping Requirements; and Operational Requirements). [30 TAC§ 116.115(b)(2)(G)]
10. **Compliance with Rules.** Acceptance of a permit by an applicant constitutes an acknowledgment and agreement that the permit holder will comply with all rules and orders of the commission issued in conformity with the TCAA and the conditions precedent to the granting of the permit. If more than one state or federal rule or regulation or permit condition is applicable, the most stringent limit or condition shall govern and be the standard by which compliance shall be demonstrated. Acceptance includes consent to the entrance of commission employees and agents into the permitted premises at reasonable times to investigate conditions relating to the emission or concentration of air contaminants, including compliance with the permit. [30 TAC § 116.115(b)(2)(H)]
11. **This** permit may not be transferred, assigned, or conveyed by the holder except as provided by rule. [30 TAC § 116.110(e)]
12. **There** may be additional special conditions attached to a permit upon issuance or modification of the permit. Such conditions in a permit may be more restrictive than the requirements of Title 30 of the Texas Administrative Code. [30 TAC § 116.115(c)]
13. **Emissions** from this facility must not cause or contribute to "air pollution" as defined in Texas Health and Safety Code (THSC) §382.003(3) or violate THSC § 382.085. If the executive director determines that such a condition or violation occurs, the holder shall implement additional abatement measures as necessary to control or prevent the condition or violation.
14. **The** permit holder shall comply with all the requirements of this permit. Emissions that exceed the limits of this permit are not authorized and are violations of this permit. <sup>1</sup>

<sup>1</sup> Please be advised that the requirements of this provision of the general conditions may not be applicable to greenhouse gas emissions.

## Special Conditions

Permit Numbers 4802 and PSDTX1260

### Emission Standards

1. This permit authorizes emissions only from those points listed in the attached table entitled "Emission Sources- Maximum Allowable Emission Rates," and the facilities covered by this permit are authorized to emit subject to the emission rate limits on that table and other operating conditions specified in this permit.
2. Complaints from affected persons of nuisance odors from the site verified by the Texas Commission on Environmental Quality (TCEQ) or any air pollution control agency with appropriate jurisdiction shall be the basis for requiring prompt remedial action to eliminate such odors. The TCEQ may require these facilities to implement one or more of the following measures: temporary production curtailment; temporary shutdown during adverse meteorological conditions; install any additional controls that are necessary to control odor emissions, etc., according to a schedule determined by TCEQ.
3. SO<sub>2</sub> emission limits will be limited to the following emission rates:

Short term: 3.00 pounds of SO<sub>2</sub> per ton of one hundred percent acid produced as defined in Attachment A, Alternative Monitoring Plan.

Long term: 1.80 pounds of SO<sub>2</sub> per ton of one hundred percent acid produced as defined in Attachment A, Alternative Monitoring Plan.

SO<sub>2</sub> and H<sub>2</sub>SO<sub>4</sub> mist limits shall not be relaxed.

H<sub>2</sub>SO<sub>4</sub> mist is limited to 0.15 pound per ton of produced H<sub>2</sub>SO<sub>4</sub> on an hourly maximum basis and 0.10 pounds per ton of produced H<sub>2</sub>SO<sub>4</sub> on an annual average basis.

H<sub>2</sub>SO<sub>4</sub> production is limited to 1,150 tons per day per rolling 12-months.

The holder of this permit shall keep records of the daily and annual production of H<sub>2</sub>SO<sub>4</sub> and the one-hour SO<sub>2</sub> emissions rates for each day as required by this special condition. Records shall be made readily available to TCEQ personnel upon request, the U.S. Environmental Protection Agency (EPA) personnel or any applicable local program with jurisdiction and may be used to determine compliance with the SO<sub>2</sub> emissions limitations specified in the maximum allowable emissions rates table (MAERT).
4. Opacity of emissions from the Unit No. 2 Stack shall not exceed 10 percent.

### Federal Applicability

5. These facilities shall comply with all applicable requirements of the U.S. Environmental Protection Agency (EPA) regulations on Standards of Performance for New Stationary Sources promulgated in Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60):
  - A. Subpart A, General Provisions.
  - B. Subpart Cd, Emissions Guidelines and Compliance Times for Sulfuric Acid Production Units.

- C. Subpart H, Standards of Performance for Sulfuric Acid Plants.
  - D. Subpart Kb, Standard of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984. This Subpart only applies to Storage Tanks 48, 49, 53, B1 and B2.
6. These facilities shall comply with all applicable requirements of the U.S. Environmental Protection Agency (EPA) regulations on National Emission Standards for Hazardous Air Pollutants in 40 CFR Part 61:
- A. Subpart A, General Provisions.
  - B. Subpart FF, National Emission Standard for Benzene Waste Operations.
7. These facilities shall comply with all applicable requirements of the U.S. Environmental Protection Agency (EPA) regulations on National Emission Standards for Hazardous Air Pollutants for Source Categories in 40 CFR Part 63:
- A. Subpart A, General Provisions.
  - B. Subpart G, National Emission Standards for Organic Hazardous Air Pollutants from The Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater.
  - C. Subpart XX, National Emission Standards for Ethylene Manufacturing Process Units: Heat Exchange Systems and Waste Operations.
  - D. Subpart GGG, National Emission Standards for Pharmaceuticals Production.

### **Operational Requirements**

8. The No. 2 Regeneration Heater is limited to 1,000 hours per rolling 12-months of operation. Fuel for this heater is limited to pipeline-quality, sweet natural gas as defined in 30 TAC Chapter 101. Records shall be updated quarterly to demonstrate compliance with this special condition.
9. The permit holder shall install and operate a fuel flow meter to measure the gas fuel usage for the No. 2 Regeneration Furnace. The monitored data shall be reduced to an hourly average flow rate at least once every day, using a minimum of four equally-spaced data points from each one-hour period. Each monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications or at least once per two years, whichever is more frequent, and shall be accurate to within 10 percent. In lieu of monitoring fuel flow, the permit holder may monitor stack exhaust flow using the flow monitoring specifications of 40 Code of Federal Regulations (CFR) Part 60, Appendix B, Performance Specification 6 or 40 CFR Part 75, Appendix A.

### **Chemical Flexibility**

10. The use of compounds at the Regeneration Unit No. 2 (EPN 104) is limited to those identified in the attached Approved Chemical List. Modifications or construction of new facilities at this site that result in emission increases of one or more chemicals in the Approved Chemical List dated February 2012, or from chemicals currently in use and previously authorized through this special

condition can only be approved through use of this special condition. Any construction of new equipment that occurs through the use of adding a new chemical is not allowed through this special condition. New chemical(s) may also be added through use of a permit by rule claim and/or registration under 30 TAC Chapter 106 or use of the qualified facilities requirements in 30 TAC Chapter 116.

- A. Short-term (pounds per hour [lb/hr]) and annual (tons per year) emissions and calculations shall be completed for each chemical at each affected source; emission rates shall be calculated in accordance with the methods documented in the permit amendment application (PI-1 dated September 4, 2003). The calculated emission rates shall not exceed the maximum allowable emission rate at any emission point.
- B. The Effect Screening Level (ESL) for the chemical shall be obtained from the current Texas Commission on Environmental Quality (TCEQ) ESL list or by written request to the TCEQ Toxicology Division. Until TCEQ Toxicology Division assigns an ESL, a default short-term ESL of 2 µg/m<sup>3</sup> may be used in the interim. A record of each ESL obtained by written request shall be kept on file by the applicant.
- C. The total emissions of any compound from all emission points in this permit must satisfy one of the following conditions:

- (1) The total maximum emission rate from all sources is less than 0.04 lb/hr and the ESL greater than 2 ug/m<sup>3</sup>; or
- (2) Case specific criteria based on modeling performed on July 30, 2004.

$$(ER/ESL)_N \leq (ER/ESL)_E$$

$(ER/ESL)_N$  = plant-wide maximum hourly emission rate based on maximum vapor pressure of new compound(s) divided by its ESL.

$(ER/ESL)_E$  = the highest ratio of any previously authorized compounds plant-wide hourly emission rate based on maximum vapor pressure divided by its ESL (e.g., 0.261).

- D. The permit holder shall maintain records of the information below and the demonstrations in steps A through C above. The following documentation is required for each compound:
  - (1) Chemical name(s), composition, and chemical abstract registry number if available.
  - (2) Molecular weight.
  - (3) Storage tanks, loading areas, and loading fugitive areas where the material is to be handled and the emission control device to be utilized.
  - (4) Date new compound handling commenced.
  - (5) Material Safety Data Sheet.



- (6) A copy of the referenced July 2004, modeling report shall be kept on-site and made available to TCEQ personnel and any local air pollution program with jurisdiction.

### **Railcar Spent Acid Loading Operations**

11. All loadings shall be submerged or bottom-filled.
12. The permit holder shall maintain and update a monthly emissions record which includes calculated emissions of VOC and SO<sub>2</sub> from all railcar spent acid loading operations over the previous rolling 12 month period. The record shall include the loading spot, control method used, start and end time of each loading event, quantity loaded in gallons, name of the liquid loaded, vapor molecular weight, liquid temperature in degrees Fahrenheit, liquid vapor pressure at the liquid temperature in psia, liquid throughput for the previous month and rolling 12 months to date. Records of VOC temperature are not required to be kept for liquids loaded from unheated tanks which receive liquids that are at or below ambient temperatures. Emissions shall be calculated using the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Loading Operations."
13. All lines and connectors shall be visually inspected for any defects prior to hookup. Lines and connectors that are visibly damaged shall be removed from service. Operations shall cease immediately upon detection of any liquid leaking from the lines or connections.
14. Railcar spent acid loading emissions shall be primarily vented to the No. 2 Regeneration Furnace (EPN: 104) and can be directed to the caustic scrubber and then vented from the caustic scrubber to the Vapor Combustor (EPN: 170) up to 1314 hours per rolling 12 months.
15. The permit holder shall not allow a railcar to be filled with material with a VOC vapor pressure above 0.5 psia at 95°F or the maximum operating temperature, whichever is greater, unless certification has been presented indicating that the railcar has passed a vapor tightness test conforming to the requirements specified below. The permit holder shall maintain records demonstrating compliance with these requirements.
  - A. Railcars shall be leak checked and certified in accordance with 49 CFR 180.509.
  - B. All lines and connectors shall be visually inspected for any defects prior to hookup. Lines and connectors that are visibly damaged shall be removed from service. Operations shall cease immediately upon detection of any liquid leaking from the lines or connections.
  - C. Prior to each loading event, the railcar shall be leak tested by pressuring up to 5 psig and holding for 5 minutes. Keep a record of each leak test including date and identification number of the railcar.

### **Spent Sulfuric Acid (H<sub>2</sub>SO<sub>4</sub>) Storage and Depressurizing Tank Trucks and Railcars**

16. Emissions from spent sulfuric acid (H<sub>2</sub>SO<sub>4</sub>) Storage Tanks 48, 49, 53, 56, and 78; spent H<sub>2</sub>SO<sub>4</sub> tank truck depressurizations; and spent H<sub>2</sub>SO<sub>4</sub> railcar depressurizations shall be primarily vented to the Regeneration Unit No. 2 Furnace, EPN 104, and can be directed to the Caustic Scrubber and Vapor Combustor (EPN 170), operating in series, up to 1314 hours per rolling 12 month period.

17. When venting to the scrubber and combustor, no more than four tank trucks may be depressurized in any one hour and no more than 1856 tank trucks may be depressurized per rolling 12-month period. The permit holder shall record the number of depressurized tank trucks each month and maintain a rolling 12-month total of depressurized tank trucks. This requirement becomes effective 90 days after permit issuance.
18. When venting to the scrubber and combustor, a maximum of eight railcars can be depressurized at any one time and a maximum of 137 railcars may be depressurized in a rolling 12-month period. The permit holder shall record the number of depressurized railcars each month and maintain a rolling 12-month total of depressurized railcars.

#### **Hazardous Waste Fuel Storage and Depressurizing Tank Trucks and Railcars**

19. Emissions from Hazardous Waste Tanks B1, B2, F2, F3, H1, H2 and bullet tank 554; hazardous waste truck depressurizations; and hazardous waste railcar depressurizations shall primarily vent to the Regeneration No. 2 Furnace (EPN 104) and can be directed to the Vapor Combustor (EPN 120) up to 1,314 hours per rolling 12 month period.
20. When venting to the Vapor Combustor EPN 120, a maximum of two hazardous waste tank trucks can be depressurized in any one hour and a maximum of 550 trucks can be depressurized in any rolling 12-month period.
21. When venting to the Vapor Combustor EPN 120, a maximum of two hazardous waste railcars can be depressurized in any one hour and a maximum of 65 railcars can be depressurized per rolling 12-month period.

#### **Planned Maintenance, Startup and Shutdown (MSS)**

22. This permit authorizes emissions from the following planned MSS activities.
  - A. This permit authorizes emissions from EPNs 170, TKINSPMSS1, and TKINSPMSS2 for the following planned MSS activities at Storage Tanks 48, 49, 53, 56, and 78. A maximum of three inspections can be conducted for the group of spent acid Storage Tanks designated as 48, 49, 53, and 56 each calendar year and a maximum of two inspections can be conducted for spent acid Storage Tank 78 each calendar year. Any liquid or solid residual from each storage tank will be removed prior to or after each tank is degassed. The represented tank degassing is limited to 1,032 hours per rolling 12 months.

Any gas or vapor removed from process equipment or storage vessels must be routed to the caustic scrubber and vapor combustor, EPN 170, for removal of sulfur dioxide at 99.9 percent and for control of volatile organic compounds (VOC) at 98.0 percent (option one) or alternatively to a portable caustic scrubber for removal of SO<sub>2</sub> at 99.0 percent immediately followed by a portable vapor combustor for VOC destruction at 98.0 percent (option two). The portable caustic scrubber pH shall be kept at a minimum of 9.0 and shall be monitored once a day. A sufficient inventory of fresh caustic shall be kept on site during the use of the portable caustic scrubber when each storage tank undergoes a planned MSS activity.

Option one controls shall not be used to degas Storage Tank 78. Options one and two operating time is each limited to 360 hours per rolling 12 months for Storage Tanks 48, 49, 53, and 56. Option two operating time is limited to 672 hours per rolling 12 months for Storage Tank 78.

Option one or option two control must be maintained until the VOC concentration is less than 34,000 parts per million volume (ppmv) as methane in the storage tank undergoing planned MSS. Each represented storage tank shall be degassed using good engineering practice to ensure air contaminants are removed from the system through the designated option one and/or option two represented emission controls to the extent allowed by process equipment or storage vessel design. The locations and/or identifiers where the purge or liquid flush material enters the storage vessel and the exit points for the exhaust gases shall be recorded.

- B. This permit authorizes emissions from EPNs 104, 120, MSS-HAZTK1, and MSS-HAZTK2 for the following planned MSS activities at Hazardous Waste Tanks (B1, B2, F2, F3, H1 and H2) and bullet tank T554:

A maximum of two shutdowns, degassing, and cleaning events can be conducted for Tanks F2, F3, and T554 and two shutdowns, degassing, and cleaning events for tanks the equivalent size of Tanks B1 or B2 and two shutdowns, degassing, and cleaning events for tank the equivalent size of H1 or H2 each calendar year. These tank MSS activities are limited to 840 hours per rolling 12 months.

Each tank will be degassed to EPN 104 prior to being drained and flushed. Each tank will then be drained and flushed by water a minimum of three times. Wastewater from the flushing activities will be pumped into another hazardous waste storage tank and subsequently burned in the industrial furnace in Regeneration Unit No. 2 (EPN 104).

The VOC concentration inside the tank must be reduced to less than 400 ppmv before each tank may be opened to atmosphere. To achieve VOC reduction, emissions must be routed to the Regeneration Unit No. 2 Industrial Furnace (EPN 104), the vapor combustor (EPN 120), and/or a carbon adsorption system (CAS).

When venting to EPN 104 or 120, the emissions are less than the normal emissions venting there from these tanks. The vapor combustor must achieve 98 percent control efficiency for VOC and the industrial furnace must achieve 99.9999 percent control efficiency for VOC.

When venting to atmosphere, either directly or through CAS, the emissions are represented by EPNs MSS-HAZTK1 and MSS-HAZTK2 and the purge rate of the blower shall not exceed 500 CFM at ambient temperature. If venting directly to atmosphere, the concentration inside the tank must be less than 400 ppmv, prior to opening.

1. The CAS shall consist of 2 or more carbon canisters in series with adequate carbon supply for the emission control operation.
2. The CAS shall be sampled upstream of the final canister and the concentration recorded at least once every hour of CAS run time to determine breakthrough of the VOC.
3. The VOC concentration shall be measured using an instrument meeting all the requirements specified in EPA Method 21 (40 CFR 60, Appendix A) with the following exceptions:

- a. The instrument shall be calibrated within 24 hours of use with a calibration gas such that the response factor (RF) of the VOC (or mixture of VOCs) to be monitored shall be less than 2.0. The calibration gas and the gas to be measured, and its approximate (RF) shall be recorded. If the RF of the VOC (or mixture of VOCs) to be monitored is greater than 2.0, the VOC concentration shall be determined as follows:  
  
VOC Concentration = Concentration as read from the instrument\*RF  
  
In no case should a calibration gas be used such that the RF of the VOC (or mixture of VOCs) to be monitored is greater than 5.0.
- b. Sampling shall be performed as directed by this permit in lieu of section 8.3 of Method 21. During sampling, data recording shall not begin until after two times the instrument response time. The date and time shall be recorded, and VOC concentration shall be monitored for at least 5 minutes, recording VOC concentration each minute. As an alternative the VOC concentration may be monitored over a five-minute period with an instrument designed to continuously measure concentration and record the highest concentration read. The highest measured VOC concentration shall be recorded and shall not exceed the specified VOC concentration limit prior to uncontrolled venting.
4. Breakthrough is defined as the highest measured VOC concentration at or exceeding 100 ppmv above background. When the condition of breakthrough of VOC from the initial saturation canister occurs, the waste gas flow shall be switched to the second canister and a fresh canister shall be placed as the new final polishing canister within four hours. Sufficient new activated carbon canisters shall be maintained at the site to replace spent carbon canisters such that replacements can be done in the above specified time frame.
5. Records of CAS monitoring shall include the following:
  - a. Sample time and date.
  - b. Monitoring results (ppmv).
  - c. Canister replacement log.
- C. Single canister systems are allowed if the time the carbon canister is in service is limited to no more than 30 percent of the minimum potential saturation time. The permit holder shall maintain records for these systems, including the calculations performed to determine the saturation time. The time limit on carbon canister service shall be recorded and the expiration date attached to the carbon can. Catalyst converter planned MSS activity is limited to 218 hours per rolling twelve months from EPN CATSCNR2. Planned MSS generated particulate emissions shall be directed to a bag filter. Outlet bag filter grain loading shall be limited to a maximum of 0.01 grains per dry standard cubic foot.
- D. Only these planned MSS activities described in this condition are authorized by this permit. These emissions are subject to the maximum allowable emission rates indicated on the maintenance, start-up, and shutdown (MAERT). The performance of each planned maintenance activity and emissions associated with it shall be recorded and the rolling 12-month emissions shall be updated on a monthly basis. These records shall include at least the following information:

- (1) the physical location at which emissions from the planned MSS activity occurred, including the emission point number, common name, and any other identifier for the point at which the emissions were released into the atmosphere;
- (2) the type of planned MSS activity and the reason for the planned activity;
- (3) the common name and the facility identification number of the facilities at which the planned MSS activity and emissions occurred;
- (4) the date and time of the planned MSS activity and its duration;
- (5) the estimated quantity of each air contaminant, or mixture of air contaminants, emitted with the data and methods used to determine it. The emissions shall be estimated using the methods identified in the amendment application, PI-1 dated December 15, 2006, December 17, 2007 and May 31, 2011, consistent with good engineering practice.

**28PI Piping, Valves, Pumps and Compressors in Spent H<sub>2</sub>SO<sub>4</sub> and SO<sub>2</sub> Service**

23. The permittee shall comply with these requirements for equipment in spent H<sub>2</sub>SO<sub>4</sub> and SO<sub>2</sub> service:
- A. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute, American Petroleum Institute, American Society of Mechanical Engineers, or equivalent codes.
  - B. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical.
  - C. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Non-accessible valves, as defined in 30 TAC Chapter 115, shall be identified in a list to be made available upon request.
  - D. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve. Except during sampling, the second valve shall be closed.
  - E. All piping components shall be inspected by visual, audible, and/or olfactory means at least once a week by operating personnel walk-through.
  - F. Damaged or leaking valves, connectors, compressor seals, and pump seals found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Every reasonable effort shall be made to repair a leaking component as specified in this paragraph within 15 days after the leak is found. If the repair of a component would require a unit shutdown, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. At the discretion of the TCEQ Executive Director or designated representative, early unit shutdown or other appropriate action may be required based on the number and severity of tagged leaks awaiting shutdown.

- G. Date and time of each inspection shall be noted in the operator's log or equivalent. Records shall be maintained at the plant site of all repairs and replacements made due to leaks. These records shall be made available to representatives of the TCEQ upon request.

#### **Piping, Valves, Connectors, Pumps and Compressors for Hazardous Waste Operations**

- 24. The permittee shall comply with these requirements for all equipment items, except relief valves, which contact hazardous or specified non-hazardous wastes or vapors from these wastes:
  - A. All valves and piping shall be above ground and so located as to be reasonably accessible for leak checking during plant operation.
  - B. Piping connections shall be welded or flanged. Flanges and flange gaskets shall be of the design and quality that the potential for fugitive losses is minimized.
  - C. All pumps shall be sealless or equipped with double mechanical seals using an oil or water based barrier fluid which operates at a pressure higher than the process pressure.
  - D. All valves shall be designed, constructed, and tested by the manufacturer for leak-free performance.
  - E. New and reworked valves installed as replacements shall be tested prior to operation by hydrostatic or gas testing in-place or by an appropriate bench test to determine that the valves do not leak.
  - F. Prior to the initial burning of hazardous waste and annually thereafter, all pumps, valves, and flanges shall be hydrotested or gas-tested at 100 percent or more the maximum operating pressure and adjustments made as necessary to obtain bubble-tight, leak-free performance.
  - G. All pumps, valves, and flanges shall be monitored monthly with a hydrocarbon gas analyzer. Monitored values which are greater than 25 parts per million (ppm) above any background concentration when measured at a distance of less than three inches shall be considered evidence of a leak.
    - (1) Pumps, valves, and flanges may be monitored on a quarterly basis if the leak percentages of these components for three consecutive monthly monitoring periods is less than 0.2 percent.

If the leak percentage for any quarterly monitoring period is 0.2 percent or greater, the facility shall revert to monthly monitoring for pumps, valves, and flanges until the facility again qualifies for the alternative monitoring schedules previously outlined in this paragraph.
    - (2) The leak percentage shall be determined by using the following formula:
$$(CI1 + Cs1) \times 100 / Ct1 = Cp1$$

Where:

CI1 = the number of pumps, valves, and flanges found leaking by the end of the monitoring period.

Cs1 = the number of pumps, valves, and flanges for which repair has been delayed and are listed on the facility shutdown log.

Ct1 = the total number of pumps, valves, and flanges in the facility subject to the monitoring requirements, as of the last day of the monitoring period.

Cp1 = the percentage of leaking pumps, valves, and flanges for the monitoring period.

H. All agitator seals shall be monitored monthly with a hydrocarbon gas analyzer. Monitored values which are greater than 25 ppm above any background concentration when measured at a distance of less than three inches shall be considered evidence of a leak.

(1) Agitator seals may be monitored on a quarterly basis if the leak percentages of these components for three consecutive monthly monitoring periods is less than 0.2 percent.

If the leak percentage for any quarterly monitoring period is 0.2 percent or greater, the facility shall revert to monthly monitoring for agitator seals until the facility again qualifies for the alternative monitoring schedules previously outlined in this paragraph.

(2) The leak percentage used in paragraph H(1) shall be determined using the following formula:

$$(Cl_2 + Cs_2) \times 100 / Ct_2 = Cp_2$$

Where:

Cl<sub>2</sub> = the number of agitator seals found leaking by the end of the monitoring period

Cs<sub>2</sub> = the number of agitator seals for which repair has been delayed and are listed on the facility shutdown log.

Ct<sub>2</sub> = the total number of agitator seals in the facility subject to the monitoring requirements, as of the last day of the monitoring period.

Cp<sub>2</sub> = the percentage of agitator seals for the monitoring period.

I. All agitator seals, pumps, valves, and flanges shall be inspected on a daily basis and shall be monitored if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method. Monitored values which are greater than 25 ppm above any three inches shall be considered evidence of a leak. Visible presence of the leaking waste liquid shall always constitute a leak and, therefore, will not necessitate the use of a monitor for detection purposes.

J. Two continuous ambient hydrocarbon monitors shall be installed, maintained and operated around the perimeter of each of the storage modules for the purpose of identifying fugitive leaks. Each monitor shall alarm at:

(1) Calculated hourly averages above 25 ppm; or

(2) An instantaneous value above 25 ppm; and

(3) An alarm shall result in both an immediate search for leaking equipment by personnel using portable monitors and a written record of the conclusion of that search.

If the hourly average remains above 25 ppm and the initial search was negative, additional searches need not be conducted except on 24-hour intervals.

Alternate, equivalent methods or additions to these required methods for identifying fugitive leaks may be approved by the Executive Director of the TCEQ upon written request by the permittee.

Hand held monitors meeting Method 21 monitoring requirements can be used to monitor for process fugitive leaks during periods when the hydrocarbon monitors are out of service.

- K. Leaking equipment shall be repaired or isolated within four hours after detection, except for valves connected directly to tanks, which are allowed four hours after the affected tank has been emptied and decontaminated. Emptying and decontamination of the affected tank shall be initiated immediately after the detection of a leak. Equipment shall not be returned to service until the leak is repaired.
- L. The repair and maintenance of any equipment component shall be assisted by use of a hydrocarbon gas analyzer such that a minimum concentration of leaking hydrocarbons is achieved and that the resulting concentration is less than 25 ppm above any background concentration when measured at a distance of less than three inches. An acceptable alternative of demonstrating VOC to be less than 25 ppm is to pressure test with nitrogen up to 125 pounds per square inch. If there is no drop in pressure over a 15 minute period, the equivalent 25 ppm threshold is satisfied.
- M. The holder of this permit shall operate and maintain all portable hydrocarbon gas analyzers to meet the performance specifications, field tests, and calibrations as found in 40 CFR § 264.1063. Alternate, equivalent equipment items, operating modes, and maintenance activities may be approved by the Executive Director of the TCEQ upon written request by the permittee.
- N. Records of monitoring and maintenance actions, required by the Special Condition No. 24 of this permit shall be maintained for a period of three years, shall be made available to authorized state and local air pollution control agencies, and shall include, at a minimum, the following data:
  - (1) A list of all components affected by this special condition;
  - (2) Checklists indicating the daily inspections are being performed;
  - (3) Checklists indicating the monthly inspections are being performed;
  - (4) Checklists indicating the annual inspections are being performed;
  - (5) Checklists indicating the continuous ambient monitors are being operated and maintained;
  - (6) Summaries including the date, time, equipment identification, and monitoring results for all leaking items;
  - (7) Summaries including the date, time, equipment identification, and corrective actions for all isolations, replacements and/or repairs performed, including monitoring results immediately after repairs; and
  - (8) Records of the calibration of the portable and continuous monitoring instruments.

(Note: Checklist and summaries may be computerized but shall be verified by signed writing confirming that the required checks were completed.)

#### **Vapor Combustors**

- 25. Each Vapor Combustor designated EPNs 120 and 170 and the portable vapor combustor designated as EPN TKINSPMSS2 shall be equipped with a continuously burning pilot system or other automatic ignition system that assures combustor ignition and that provides immediate



notification of appropriate supervisory personnel when the ignition system ceases to function properly.

- A. When waste gases are being vented to Vapor Combustor EPN 120, the temperature shall be maintained in, or immediately downstream of, the combustion chamber above 1400°F.
- B. When waste gases are being vented to Vapor Combustor EPN 170, the temperature shall be maintained in, or immediately downstream of, the combustion chamber above 1400°F prior to the stack test performed in accordance with Special Condition 27. Following the completion of that stack test, the six minute average temperature shall be maintained above the minimum one-hour average temperature maintained during the last satisfactory stack test.
- C. When waste gases are being vented to the vapor combustors, the temperature measurement device shall reduce the temperature readings to an averaging period of 6 minutes or less and record it at that frequency. The temperature monitor shall be installed and maintained according to the manufacturer's specifications. The thermocouple shall be factory calibrated. An annual calibration check shall be performed using a second factory-calibrated thermocouple and comparing the two measurements. The thermocouple reading during the calibration check shall be within  $\pm 5$  percent of the second thermocouple reading. The device shall have an accuracy of the greater of  $\pm 2$  percent of the temperature being measured expressed in degrees Celsius or  $\pm 2.5^\circ\text{C}$ .
- D. Quality assured (or valid) data must be generated when the VCU is operating. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the VCU operated over the previous rolling 12 month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded.

The vapor combustor shall be operated with no visible emissions and have a constant pilot flame during all times waste gas could be directed to it. The pilot flame shall be continuously monitored by a thermocouple or an infrared monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated or have a calibration check performed at a frequency in accordance with, the manufacturer's specifications.

#### **Initial Demonstration of Compliance**

26. The holder of this permit shall perform stack sampling and other testing as required to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from the Regeneration Unit No. 2 Stack (EPN 104). The holder of this permit is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense.

The initial air permit compliance test was completed in April 2014. If the normal production rate of  $\text{H}_2\text{SO}_4$  from the Regeneration Unit No. 2 exceeds by more than 10 percent the tons per day maintained during the most recent air permit compliance test of EPN 104, the permit holder must notify, in writing, the appropriate TCEQ Regional Office, and the source may be subject to additional sampling to demonstrate continued compliance.

- A. The appropriate TCEQ Regional Office in the region where the source is located shall be contacted as soon as testing is scheduled, but not less than 45 days prior to sampling to schedule a pretest meeting.

The notice shall include:

- (1) Date for pretest meeting,
- (2) Date sampling will occur,
- (3) Name of firm conducting sampling,
- (4) Type of sampling equipment to be used, and
- (5) Method or procedure to be used in sampling.

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for submitting the test reports. A written proposed description of any deviation from sampling procedures specified in permit conditions or the TCEQ or EPA sampling procedures shall be made available to the TCEQ prior to the pretest meeting. The TCEQ Regional Director shall approve or disapprove of any deviation from specified sampling procedures. Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Office of Air, Air Permits Division. Test waivers and alternate/equivalent procedure proposals for New Source Performance Standards testing, which must have the EPA approval, shall be submitted to the TCEQ Regional Director.

- B. Air contaminants emitted from the Regeneration Unit No. 2 Stack (EPN 104) to be tested for include (but are not limited to) VOC, CO, H<sub>2</sub>SO<sub>4</sub> mist, NO<sub>x</sub>, PM and SO<sub>2</sub>. These stack testing results shall be used to demonstrate compliance with Special Condition Nos. 1 and 3. Sampling shall occur at such other times as may be required by the Executive Director of the TCEQ. Requests for additional time to perform sampling shall be submitted to the TCEQ Regional Office. Additional time to comply with the applicable requirements of 40 CFR Part 60 and 40 CFR Part 61 requires the EPA approval, and requests shall be submitted to the TCEQ Regional Director.

The sulfuric acid plant shall be sampled while operating at the maximum possible safe production rate (as determined by the permittee) for the H<sub>2</sub>SO<sub>4</sub> Regeneration Unit No. 2 at the time of testing for EPN 104. This H<sub>2</sub>SO<sub>4</sub> production rate shall be monitored and recorded during the stack test of EPN 104.

- C. Sampling reports shall comply with the attached provisions of Chapter 14 of the TCEQ Sampling Procedures Manual. One copy of the final sampling report shall be distributed as follows within 60 days after sampling is completed.

The appropriate TCEQ Regional Office; each applicable local air pollution control program.

- D. A written proposed description of any deviation from sampling procedures specified in permit conditions or the TCEQ or EPA sampling procedures and any written contact as soon as testing is scheduled, but not less than 45 days prior to sampling to schedule a pretest meeting shall be sent to each applicable local air pollution control program with jurisdiction in conjunction with paragraph A of this special condition. Requests for additional time to perform sampling in conjunction with paragraph C of this special condition shall be sent to each applicable local air pollution control program with jurisdiction.

Copies of the final sampling report shall be forwarded to the offices below within 60 days after sampling is completed. Sampling reports shall comply with the attached provisions entitled "Chapter 14, Contents of Sampling Reports" of the TCEQ Sampling Procedures

Manual. The reports shall be distributed as follows:

One copy to the appropriate TCEQ Regional Office.

One copy to each local air pollution control program.

- E. Sampling ports and platform(s) shall be incorporated into the design of Regeneration Unit No. 2 Stack (EPN 104) according to the specifications set forth in the attachment entitled "Chapter 2, Guidelines For Stack Sampling Facilities" of the Texas Commission on Environmental Quality (TCEQ) Sampling Procedures Manual. Alternate sampling facility designs must be submitted for approval to the TCEQ Regional Director.
27. The permit holder shall perform stack sampling and other testing as required to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from Vapor Combustor 2 (EPN 170) to demonstrate compliance with the MAERT. The permit holder is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense. Sampling shall be conducted in accordance with the appropriate procedures of the TCEQ Sampling Procedures Manual and the U.S. EPA Reference Methods.

Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Office of Air, Air Permits Division. Test waivers and alternate/equivalent procedure proposals for Title 40 Code of Federal Regulation Part 60 (40 CFR Part 60) testing which must have EPA approval shall be submitted to the TCEQ Regional Director.

- A. The appropriate TCEQ Regional Office shall be notified not less than 45 days prior to sampling. The notice shall include:
- (1) Proposed date for pretest meeting.
  - (2) Date sampling will occur.
  - (3) Name of firm conducting sampling.
  - (4) Type of sampling equipment to be used.
  - (5) Method or procedure to be used in sampling.
  - (6) Description of any proposed deviation from the sampling procedures specified in this permit or TCEQ/EPA sampling procedures.
  - (7) Procedure/parameters to be used to determine worst case emissions and maximum operating (or loading) rates during the sampling period.

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for the test reports. The TCEQ Regional Director must approve any deviation from specified sampling procedures.

- B. Air contaminants emitted from Vapor Combustor 2 (EPN 170) to be tested for include (but are not limited to) VOC, and SO<sub>2</sub>.
- C. Sampling shall occur within 12 months of the permit issuance date for the amendment application received February 1, 2016 (Project No. 229587) and at such other times as may be required by the TCEQ Executive Director. Requests for additional time to perform sampling shall be submitted to the appropriate regional office.

- D. The facility being sampled shall operate at maximum operating (or loading) rates during stack emission testing. These conditions/parameters and any other primary operating parameters that affect the emission rate shall be monitored and recorded during the stack test. Any additional parameters shall be determined at the pretest meeting and shall be stated in the sampling report. Permit conditions and parameter limits may be waived during stack testing performed under this condition if the proposed condition/parameter range is identified in the test notice specified in paragraph A and accepted by the TCEQ Regional Office. Permit allowable emissions and emission control requirements are not waived and still apply during stack testing periods.

During subsequent operations, if the maximum operating (or loading) rate is greater than that recorded during the test period, stack sampling shall be performed at the new operating conditions within 120 days. This sampling may be waived by the TCEQ Air Section Manager for the region.

Copies of the final sampling report shall be forwarded to the offices below within 60 days after sampling is completed. Sampling reports shall comply with the attached provisions entitled "Chapter 14, Contents of Sampling Reports" of the TCEQ Sampling Procedures Manual. The reports shall be distributed as follows:

One copy to the appropriate TCEQ Regional Office.

One copy to each local air pollution control program.

- E. Sampling ports and platform(s) shall be incorporated into the design of Vapor Combustor 2 (EPN 170) according to the specifications set forth in the attachment entitled "Chapter 2, Guidelines for Stack Sampling Facilities" of the Texas Commission on Environmental Quality (TCEQ) Sampling Procedures Manual. Alternate sampling facility designs must be submitted for approval to the TCEQ Regional Director.

#### **Continuous Demonstration of Compliance**

28. The industrial furnace shall not emit non-sulfate particulate matter in excess of 0.02 grain per dry standard cubic feet when corrected for the amount of oxygen in the stack gas in accordance with the formula specified in 40 CFR § 264.343(c). Corrections for the amount of sulfate particulate in the stack gas shall conform to the procedures specified in the TCEQ Laboratory Methods Manual.
29. The following requirements apply to capture systems for EPN 104 emitting SO<sub>2</sub>.
- A. The permit holder shall conduct a once a month visual, audible, and/or olfactory inspection of the capture system to verify there are no leaking components in the capture system;
- B. The control device shall not have a bypass. If any of the above inspections are not satisfactory, the permit holder shall promptly take necessary corrective action.
30. The minimum liquid flow to the absorber (EPN 104) shall be 200 gallons per minute (gpm). The circulation rate shall be monitored and recorded at least once a day.

The liquid flow rate shall be recorded at least once an hour.

The flow monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications, or at least annually, whichever is more frequent, and shall be accurate to within 2 percent of span or 5 percent of the design value.

The minimum pH on the second stage of the scrubber's scrubbing solution downstream of the Brinks mist filter is 5.0. This pH shall be analyzed and recorded at least once a day.

Each monitoring device shall be cleaned with an automatic cleaning system, or cleaned weekly using hydraulic, chemical, or mechanical cleaning. Each monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications, or at least weekly, whichever is more frequent, and shall be accurate to within 0.5 pH unit.

Quality-assured (or valid) data must be generated when the facility generating emissions are operating except during the performance of a daily zero and span check. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in hours) that the facility generating emissions operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgement and the methods used recorded.

31. The holder of this permit shall install, calibrate, maintain and operate a continuous emission monitoring system (CEMS) to measure and record the in-stack concentration of SO<sub>2</sub> and the total gas flow rate from the Regeneration Unit No. 2 Stack (EPN 104) on and after April 1, 2014.
  - A. The CEMS calibration shall be checked daily and the CEMS shall be zeroed and spanned using cylinder gas at least once a week and corrective action taken when the results differ by greater than  $\pm 5$  percent from the tagged cylinder gas value. The monitoring data shall be reduced to one-hour average concentrations at least once every month using a minimum of four equally spaced data points from each one-hour period. The individual average concentrations shall be reduced to units of the permit allowable emissions rates in pounds of SO<sub>2</sub> per hour at least once every month.
  - B. All records required in this permit, all monitoring data and quality assurance data shall be maintained by the source for a period of two years and shall be made readily available to TCEQ personnel, EPA personnel or any local program with jurisdiction upon request. The data from the CEMS may, at the discretion of the TCEQ, EPA personnel or any local program with jurisdiction, be used to determine compliance with the SO<sub>2</sub> emission limits specified in MAERT.
  - C. The CEMS must operate at all times when sulfur bearing compounds (except natural gas) are being fed to the furnace, but need not operate during CEMS breakdown, repairs for calibration checks and zero span adjustments.
  - D. The CEMS shall be used to demonstrate compliance with the SO<sub>2</sub> emission limits as found in Special Condition No. 3. The permit holder must meet the quality assurance procedures required by 40 CFR Part 60 Appendix F or any alternate procedures specified in the Alternate Monitoring Plan (Attachment A).
    - (1) The SO<sub>2</sub> CEMS shall monitor and record the three hour arithmetic average (not weighted by production volume) SO<sub>2</sub> emission rate in units of pounds per ton of one hundred percent acid produced.

- (2) The SO<sub>2</sub> CEMS shall monitor and record the SO<sub>2</sub> emission rate averaged (arithmetic average, not weighted by production) over all operation hours in each 365 day period in units of pounds per ton of one hundred percent acid produced.
- (3) Implementation of the monitoring requirements has been defined in the Alternate Monitoring Plan (AMP) for the SO<sub>2</sub> CEMS system.
- (4) The AMP supersedes the corresponding SO<sub>2</sub> monitoring requirements of NSPS Subpart H.
- (5) All steps necessary to avoid CEMS breakdowns and minimize CEMS down time must be taken. This shall include, but is not limited to, operating and maintaining the CEMS in accordance with best practices and maintaining an on-site inventory of spare parts or other supplies necessary to make rapid repairs of the equipment.
- (6) In the event of CEMS downtime lasting longer than twenty-four hours, the permittee shall demonstrate compliance with the emission limits established in Special Condition No. 3 according to the procedures specified in the AMP.

Date: July 26, 2018

## **Attachment A**

### **Alternative Monitoring Plan for SO<sub>2</sub> Emissions**

#### **Eco Services Operations Corp. Houston, TX Unit 2**

#### **Single Absorption Sulfuric Acid Regeneration Plant with Scrubber**

#### **Justification for Using an Alternative Monitoring Plan (AMP) for SO<sub>2</sub> emissions**

The regulations that established the NSPS for sulfuric acid plants are over 30 years old. At the time, the regulatory standard was established as 4 lb of SO<sub>2</sub> emissions per ton of 100 % sulfuric acid produced, and compliance with the standard was to be demonstrated using a calculation similar to Equation 1 below. Regulations required the use of a CEMS to measure SO<sub>2</sub> concentration at the stack (M2), but only required measurement of SO<sub>2</sub> entering the converter by suitable method three times per calendar day. Plants typically rely on the use of a Reich test once per shift to establish the SO<sub>2</sub> concentration entering the converter (M1). While the stack measurement represented a nearly continuous real time indication of the stack concentration, performing a Reich test once per shift for the converter inlet concentration provides little more than a random sample once every eight hours.

The methodology proposed in this AMP will provide a more continuous real-time indication of compliance by using a process analyzer to measure the converter inlet SO<sub>2</sub> concentration. While this analyzer will be nearly identical to the CEMS that is commonly used at the stack, it will not be able to meet all of the standards that are usually applied to a CEMS because of the process conditions and/or physical limitations of an existing facility. For example, it is not feasible to modify the existing ductwork around the analyzer to meet the normal guidelines for straight runs of pipe upstream / downstream of the analyzer. We believe that the disadvantages (places where the analyzer is not quite up to CEMS standards) are far outweighed by the advantages of using a real time instrument, rather than a periodic Reich test, to measure the converter inlet concentration. Eco Services will use best professional judgment to ensure the analyzer located at the converter inlet provides representative data.

Except as noted in this document, the objective of this proposed AMP is to maintain the process analyzer at the converter inlet in a manner that is similar to the stack CEMS, as set forth in 40 CFR Part 60, Appendix B and F.

#### **Definitions**

"CEMS" or "Continuous Emission Monitoring System" shall mean equipment that continuously measures and records the concentration and/or emission rate of a pollutant, in the units specified by the emission limit concerned

."Long-Term Limit" shall mean a sulfur dioxide (SO<sub>2</sub>) emission limit for a sulfuric acid plant expressed as pounds per ton of 100% sulfuric acid produced ("lbs/ton"), averaged over all Operating Hours in a rolling 365-day period.

"Malfunction" shall mean, consistent with 40 C.F.R. § 60.2, any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner, but shall not include failures that are caused in part by poor maintenance or careless operation.

"Operating Hours" shall mean periods during which sulfur or sulfur-bearing compounds, excluding conventional fossil fuels such as natural gas or fuel oil, are being fed to the furnace.

"Short-Term Limit" shall mean the SO<sub>2</sub> emission limit for each sulfuric acid plant expressed as pounds per ton of 100% sulfuric acid produced ("lbs/ton"), averaged over each rolling 3-hour period. Except for periods of Startup, Shutdown and Malfunction, the Short-Term Limits established under this Consent Decree shall apply at all times.

"Shutdown" shall mean the cessation of operation of a sulfuric acid plant for any reason. Shutdown begins at the time sulfur or sulfur-bearing feeds, excluding conventional fossil fuels such as natural gas or fuel oil, to the furnace ceases.

"Startup" shall mean the 24-hour period at any sulfuric acid plant beginning when the feed of sulfur or sulfur-bearing materials, excluding conventional fossil fuels such as natural gas or fuel oil, to the furnace commences after a main gas blower shutdown.

#### **Part 60.84 Emissions Monitoring.**

Compliance with the Long-Term Limit and Short-Term Limit defined by the Consent Decree will be demonstrated using SO<sub>2</sub> analyzers at the converter inlet and exit stack using the following equation. Refer to additional discussion below the equation for specific details related to data input and calculation.

##### **Equation 1**

$$X_e = (M_1 - M_2) / (M_1 - 1.5 \times M_1 \times M_2)$$

$$E = (K / X_e) - K$$

Where:

$X_e$  = fractional conversion efficiency

$M_1$  = fractional concentration of SO<sub>2</sub> entering the converter

$M_2$  = fractional concentration of SO<sub>2</sub> at the stack

$E$  = SO<sub>2</sub> emission rate in lb / ton of 100 % acid produced

$K = 1306 = (2000 \text{ lb / ton}) \times (64 \text{ lb / lbmol SO}_2) / (98 \text{ lb / lbmol H}_2\text{SO}_4)$

#### **Short-Term Limit**

The following procedure and calculation will be performed once every five minutes during all Operating Hours, except periods of Startup, Shutdown or Malfunction, to demonstrate compliance with the Short-Term Limit for SO<sub>2</sub>.

- At any given time the system will maintain an array consisting of the 36 most recent samples of the SO<sub>2</sub> concentrations at the converter inlet and at the exit stack.
- Once every five minutes, the system will sample the latest SO<sub>2</sub> concentrations, add the recent readings to the array and delete the oldest readings. If the unit is not operating then the array of data will not change.



- $M1_{3hravg}$  will then be calculated as the arithmetic average of the 36 most recent data samples for the fractional concentration of  $SO_2$  entering the converter ( $M1_{3hravg}$ ).
- $M2_{3hravg}$  will then be calculated as the arithmetic average of the 36 most recent data samples for the fractional concentration of  $SO_2$  at the stack ( $M2_{3hravg}$ ).
- The rolling 3 hour average  $SO_2$  emissions ( $E_{3hravg}$ ) will then be calculated per Equation 2.

**Equation 2 (rolling 3 hour average  $SO_2$  emissions)**

$$Xe_{3hravg} = (M1_{3hravg} - M2_{3hravg}) / (M1_{3hravg} - 1.5 \times M1_{3hravg} \times M2_{3hravg})$$

$$E_{3hravg} = (K / Xe_{3hravg}) - K$$

- The production unit will be deemed to be operating in compliance with the Short Term Limit if  $E_{3hr-avg}$  does not exceed 3.0 lb of  $SO_2$  per ton of 100% sulfuric acid produced during all Operating Hours except periods of Startup, Shutdown or Malfunction.

During routine calibration checks and adjustments of the  $SO_2$  monitors, the  $SO_2$  measurement will be “frozen” at its pre-calibration level. Refer to System Maintenance and Malfunction for guidance during CEMS malfunctions, breakdowns, and repairs.

**Long-Term Limit**

The following method will be used to calculate the daily average lb of  $SO_2$  per ton of 100% sulfuric acid, and the number of Operating Hours for the calendar day.

- Once every five minutes during all Operating Hours, the  $SO_2$  concentrations (converter inlet and exit stack) will be sampled and this time will be counted as five operating minutes. If the unit is not operating, then the  $SO_2$  concentrations will not be sampled.
- The daily average will be calculated as follows for each calendar day:
  - o  $M1_{daily avg}$  will be calculated as the arithmetic average of the sample population for the fractional concentration of  $SO_2$  entering the converter.
  - o  $M2_{daily avg}$  will be calculated as the arithmetic average of the sample population for the fractional concentration of  $SO_2$  at the stack
  - o  $E_{(daily avg)}$  will then be calculated using Equation 3.

**Equation 3 (daily average  $SO_2$  emissions)**

$$Xe_{daily avg} = (M1_{daily avg} - M2_{daily avg}) / (M1_{daily avg} - 1.5 \times M1_{daily avg} \times M2_{daily avg})$$

$$E_{daily avg} = (K / Xe_{daily avg}) - K$$

- o The number of operating minutes for the day will be summed ( $T_{day,}$ )

- $E_{dayavg}$  and  $T_{day}$  will be used to calculate a 365-day rolling average of lb/ton. The daily averages will be weighted by the number of operating minutes per day, as per Equation 4.

Once the system has been in operation for 365 days, compliance with the Long Term Limit (365-day rolling average)  $SO_2$  emission rate will be calculated using Equation 4.

#### Equation 4

$$E_{365avg} = \sum [E_{dayavg} * T_{day}] / \sum T_{day}$$

The production unit will be deemed to be operating in compliance with the Long-Term Limit if  $E_{365avg}$  does not exceed 1.8 lb of  $SO_2$  per ton of 100% sulfuric acid produced during all Operating Hours

During routine calibration checks and adjustments of the  $SO_2$  monitors, the  $SO_2$  measurement will be “frozen” at its pre-calibration level. Refer to System Maintenance and Malfunction for guidance during CEMS malfunctions, breakdowns, and repairs:

#### **Pt. 60.84 Emissions Monitoring Pt. 60, App. B, Spec. 2, Section 6.0 (Stack and Converter Inlet Analyzers)**

Eco Services proposes to use the following stack analyzer specifications to satisfy the requirements of Pt. 60.84 and Pt. 60, App. B, Spec. 2, Section 6.0. The stack analyzer span must be capable of accommodating elevated emissions during startup. Specifications for the analyzer located at the converter inlet are based on Eco Services' experience with process analyzers at these locations.

An equivalent analyzer may be substituted for any reason.

Location	Manufacturer	Model Number	Range
Stack	Ametek Photometric Analyzer (or equivalent)	920 (or equivalent)	Dual range: Normal: 0 – 500 ppm $SO_2$ SSM: 0 – 3,600 ppm $SO_2$
Converter Inlet	Ametek Photometric Analyzer (or equivalent)	920 or IPS-4 (or equivalent)	Single range: 0 – 15 % $SO_2$

#### **Pt. 60, App. B, Spec. 2, Section 1.0 (Stack and Converter Inlet Analyzers)**

Initial compliance certification required only if the analyzer is replaced or if system modifications require one to be performed. Additional detail and exceptions noted below under System Modifications below.

#### **Pt. 60, App. B, Spec. 2, Section 8.0 (Converter Inlet Analyzer)**

Eco Services will select the optimum location to obtain representative  $SO_2$  readings from this location. Turbulence near the blower exit and elevated temperature at the converter inlet may require an analyzer measurement location that differs from the requirements of this section (e.g. pollutant stratification). A pollutant stratification test is not warranted for this application because (a) process conditions make it extremely unlikely that stratification could occur, and (b) the samples obtained under this monitoring plan

are the same as would be obtained under the NSPS, except that the instrument will typically take 288 samples per day rather than the 3 required by the NSPS. Therefore, no new stratification risk is introduced by this method, but the instrument will typically take about 100 times as many samples.

**Pt. 60, App. B, Spec. 2, Section 16.0 (Converter Inlet Analyzer)**

Eco Services will use the Alternative Relative Accuracy Procedure provided in Section 16.2.1 (i.e. conduct a cylinder gas audit).

**Pt. 60, App. F, Spec. 2, Section 5.0 (Converter Inlet Analyzer)**

Eco Services will use quarterly cylinder gas audits (i.e. four per year) to satisfy the requirements of this section.

**System Maintenance and Malfunction**

Except for monitoring malfunctions, associated repairs, and required quality assurance or control activities (including calibration checks and required zero and span adjustments), the plant shall conduct monitoring in continuous operation during all Operating Hours as defined above

In the event of a CEMS malfunction of greater than 24 hours:

- Exit stack gas will be sampled and analyzed at least once per hour, during all Operating Hours. Sampling will be conducted by Reich test or other method (e.g. portable analyzer).
- Converter inlet gas will either be sampled, or estimated using engineering judgment, at least once every four hours during all Operating Hours.
- Compliance with the Short-Term Limit and Long-Term Limit shall be verified by using these data and Equations 2, 3, and 4 with the following exceptions. If the stack CEMS is out of service, the most recent hourly reading will be substituted for the 12 five-minute readings that would otherwise be taken if the system was operating normally. Similarly, if the converter inlet SO<sub>2</sub> analyzer is out of service, the most recent four-hour reading will be substituted for the 48 five-minute readings that would otherwise be taken if the system was operating normally.

In the event of an analyzer malfunction, a like-kind replacement may be used while repairs are being made. A cylinder gas audit (CGA) must be performed on the replacement analyzer as soon as is practicable after it is placed in service. The daily calibration drift requirement would also apply to the replacement analyzer.

**System Modifications**

Significant replacement, modification, or change in certified CEMS equipment may require a complete recertification. If a recertification is required, it will be conducted within 90 days. Examples include:

- Change in location or orientation of the sampling probe or site
- Complete replacement of an existing continuous emission monitoring system.

When replacing components that can alter the physical characteristics or conditioning of the sample in the field, a CGA is required. The following activities will require a CGA to be performed before returning the analyzer to service.

- Replacement of the analyzer
- Detector replacement
- Replacement of equipment associated with the detector

The following activities are not expected to trigger a CGA. However, it is recommended that a Calibration Drift check be performed before returning to service.

- Filter replacement
- Data Recorder Repairs
- Tubing replacement

General guidance: When replacing components or devices that do not affect the physical characteristics or handling of the gas in the field such as data recorders, a CGA is not required. A calibration drift check normally should be conducted. If the repaired component affects the transport of the gas to the analyzer, such as replacing tubing, a leak check should be conducted.

### **Alternative Monitoring System**

The monitoring system proposed in this Alternative Monitoring Plan is expected to be a significant improvement over the monitoring requirements contained in the NSPS for sulfuric acid plants. However, the real-time calculation of SO<sub>2</sub> emissions is dependent upon the use of an SO<sub>2</sub> analyzer in the inlet duct to the converter, and the maintenance of that analyzer to approximately the same performance standards normally applied to the stack SO<sub>2</sub> CEMS. This is an unproven application of this technology, and there is some risk that the converter inlet SO<sub>2</sub> analyzer will not be able to perform as required despite the best efforts of Eco Services and the instrument manufacturer.

If Eco Services and the instrument manufacturer are unable to make the system operate to the indicated standards because the converter inlet SO<sub>2</sub> analyzer is unreliable and / or inaccurate in this application, then Eco Services will promptly notify EPA Region 6, and TCEQ of its determination and proceed as follows:

- Eco Services will immediately begin meeting its SO<sub>2</sub> emissions monitoring requirements in accordance with 40 CFR Part 60, Subpart H, except that the SO<sub>2</sub> concentration at the converter inlet will be analyzed six times per day rather than the three times per day specified in the regulations.
- Eco Services will provide whatever information is requested by EPA regarding the determination that the converter inlet SO<sub>2</sub> analyzer cannot meet the necessary performance standards.

- Eco Services will work with EPA to determine whether real time measurement of SO<sub>2</sub> emissions (in lbs / ton of acid) can be readily accomplished through other means without the use of an SO<sub>2</sub> analyzer at the converter inlet.

Dated: July 26, 2018

# APPROVED CHEMICAL LIST FOR HAZARDOUS WASTE OPERATIONS

Permit Number 4802/PSDTX1260

Acetaldehyde	4-aminophenol
Acetic Acid	Aminoethyl Ethanolamine
Acetic Anyhdride	tris(hydroxymethyl)aminomethane
Acetone	Amitrole (solid)
Acetone Cyanohydrin	Ammonia
Acetonitrile	Ammonium Hydroxide
Acetophenone	Ammonium Nitrate*
2-acetylaminofluorene	Ammonium Polysulfide
Acetyl Chloride	Ammonium Procrate, dry
Acetylsalicylic acid	t-Amyl Hydroperoxide
Neo Acid Anhydrides	Aniline*
Acrolein*	Anthracene*
Acrylamide (solid)	Anthroquinone
Acrylonitrile*	Antimony*
Acrylic Acid	Aromatic Naphtha
Adipic acid	Arsenic*
Adiponitrile	Arsine*
Aldrin	Ash
Alicarb	Atrazine*
Aliphatic Carboxylic Acid	Auramine
Aliphatic Hydrocarbons	Azeo Oil
Alkenyl Caroxylate	Barium*
Allyl Alcohol	Barium Sulfate
Alpha Methylstyrene	Bendocarb
Alpha Naphtylamine	Benz(a)anthracene
Alpha Naphthylthiourea	Benz(a)pyrene*
2-(2-Aminoethoxy)Ethanol	Benz(c)acrindine

## APPROVED CHEMICAL LIST FOR HAZARDOUS WASTE OPERATIONS

Permit Number 4802/PSDTX1260

Page 2

Benzaldehyde	Bipyridyl
Benzamide,3,5-dichloro-N-(1,1-dimethyl-2-propynyl)	Bis(2-chloroethoxy)methane
Benzyl mercaptan	Bishexamethylenediamine
Benzene*	Bis(methylthio)methane
Benzene,1,1-(2,2-dichloroethylidene)bis [4-chloro-]	Boron
Benzenediamine	Bromoacetone, liquid
Benzeneethanamine,alpha,alpha-dimethyl-	Bromoform (tribromomethane)
Benzene Hexchloride	Bromomethane (methyl bromide)
Benzene Sulfonyl Chloride	Brucine (solid)
Benzidine (solid)	Butadiene polymer
Benzonitrile	Butadiene tar
Benzo (RST) pentaphene	n-Butyl Acetate
Benzo (a) pyrene	Butyraldehyde*
Benzo (a) phenanthrene	Butyl Ether
Benzotriazobenzotriazole	n-Butyl Formate
Benzoic Acid	n-Butyl Propionate
p-Benzoquinone*	1,3 Butadiene
2-(2-hydroxy-3,5 di-(tert)amylphenol)	n-Butane
benzotirazole	1,4 Butanediol
Benzotrichloride	Butanol
Benzoyl Chloride	2-Butanol
Benzyl Chloride*	n-butanol
Beryllium	t-butanol
Biodiesel	1-Butene
Biphenyl*	cis-3 Butene
	2-methyl-1-butene

## APPROVED CHEMICAL LIST FOR HAZARDOUS WASTE OPERATIONS

Permit Number 4802/PSDTX1260

Page 3

n-butyl acetate	1,2,4,5-tetrachlorobenzene
Butyl Acrylate	Chlorobenzilate
sec-butyl alcohol	1-Chlorobutane
Butylcellosolve	2-chloroethyl vinyl ether
t-Butyl Hydroperoxide*	Chloroform
n-Butylmercaptan	Bis (2-chloro-1-methylethyl) ether
1,3-Butylene Glycol	Chloromethane
2-butyne-1,4-diol (BYD)	(Chloromethyl) ether, bis
1,4-butyne-1,3-diol	Chloromethyl methyl ether
Butyric Acid*	Chloronaphazine
2-methyl butyric acid	2-chloronaphthalene
C-4	o-Chlorophenol
Cacodylic Acid	2,6-dichlorophenol
Camphechlor	Chromium*
Carbaryl (solid)	Chrysene*
Carbon Bisulfide	Coal tar
Carbon Disulfide*	Creosote
Carbon Tetrachloride	Cresol
Castor Oil	m-cresol
Catechol	4-chloro-m-cresol
Chloral, anhydrous, inhibited	p-cresol
Chlordane	Crotonaldehyde
Chlorinated Polyisobutylene	Cumene Hydroperoxide
Chloroacetaldehyde	di-tert-butyl-para-Cresol
Chloroaniline-p	Cumene
Chlorobenzene	Cumene Hydroperoxide



## APPROVED CHEMICAL LIST FOR HAZARDOUS WASTE OPERATIONS

Permit Number 4802/PSDTX1260

Page 4

p-Cumyl Phenol	Dichlorobutene
Cyanogen Bromide	Dichloro-1,4, butene-2
Cyanogen Chloride with less than 0.9% water	1,2-Dichloroethane
Cyanogen Gas	trans-1,2-dichloroethene
1,3,6-tricyanohexane	Dichloroethyl ether
Cyclohexane	Dichlorodifluoromethane
Cyclohexanone	Dichloromethane
Cyclooctadiene	Dichlorophenol-2,4
Cyclophosphamide	2,4 Dichlorophenoxy Acetic Acid
Copper*	Dichloropropylene-1,3
Creosote*	Dicyanoethylamine
Crotonaldehyde*	Dicyclopentadiene
Cyclohexyl Amine*	Dieldrin
Cyclopentadiene	Diepoxybutane
Daunomycin	Diethanolamine
DDT	Diethylaminoacetone
Diacetone Alcohol	Diethyl Sulfide
Dialkyl Disulfide Oil	Diesel Fuel
Dibenz (A,H) anthracene	Di(2-ethylhexyl)phthalate
Dibromomethane	Diethylarsine
Dibromomethane-1,2	Diethyl Ether
Dibutylphthalate	Diethyl Ketone
Dicamba	Diethyl Phthalate
o-Dichlorobenzene	Diethylstilbestrol
m-Dichlorobenzenep-Dichlorobenzene (solid)	Diethylene Glycol
Dichlorobenzidine-3,3 (solid)	Diethylene Glycol Dimethyl Ether

## APPROVED CHEMICAL LIST FOR HAZARDOUS WASTE OPERATIONS

Permit Number 4802/PSDTX1260

Page 5

Diethylene Glycol Monomethyl Ether	Dimethyl Sulfide
Diethylenetriamine	Dimethyl Sulfoxide
Diglyme	Dimethyl Disulfide*
2,3 dihydrofuran	Dimethyl Formamide (DMF)
Dihydrosafrole	1,2 Dimethoxybenzene
Diisobutylene	Dimethoxyethane
Dimethoate	Dimethyl Ether
Dimethoxybenzidine-3,3	Dimethylaminopropylamine DMAPA
Dimethylamine	Dimorphoxy Amino Glycol
p-dimethylaminoazobenzene	4,6 Dinitro-o-cresol*
Dimethylaminoethoxyethanol	Dinitrocyclohexylphenol
Dimethylbenz(a)-anthracene-7,12	Dinitrotoluene-2,4
Dimethylbenzene	Di-n-octyl Phthalate
Dimethylbenzidine-3,3	Dinoseb
(1,3-dimethylbutyl)-N-phenyl	Di-N-Propylamine
Dimethylcarbonyl Chloride	Dioxane
Dimethyl Disulfide	Diphenyl Hydrazine-1,2
Dimethylethanolamine*	Dipropylamine
Dimethylformamide	Dipropylene Glycol Methyl Ether
Dimethylhydrazine, unsymmetrical	Disulfoton
Dimethylmethylaminoethoxy ethaneamine	Di-t-butyl Peroxide
Dimethylphenol -2,4	Dithiobiuret
(1,4-dimethylphenyl)-N-phenyl	Dithiobiuret
Dimethyl Phthalate	Diruon
Dimethyl Siloxane	Dodecane
Dimethyl Sulfate	Dodecylbenzene

## APPROVED CHEMICAL LIST FOR HAZARDOUS WASTE OPERATIONS

Permit Number 4802/PSDTX1260

Page 6

Dodecylbenzene alkylates	Ethyl trimethoxysilane
Dodecyl Mercaptan*	Ethylene
tert-dodecylmercaptan	Ethylene Bromide
Endosulfan	Ethylene Dichloride
Endrin	Ethylene Imine, inhibited
Epichlorohydrin*	Ethylene Oxide*
Epinephrine	Ethylene Thiourea (solid)
1,2 ethanedithiol	Ethylidene Dichloride
Ethane,1,1,1,2-tetrachloro	2-Ethylhexaldehyde
Ethanimidothioic acid, N- [(methylamino)carbonyl[oxy]-methy ester]	Ethyl Lactate
Ethanol	Ethylene Almine, inhibited
n-nitrosodiethanolamine	Ethylene Diamine
Ethoxy Ethanol	Ethylene Glycol
Ethoxy Triglycol	Ethylene Oxide
Ethyl Acetate	2 Ethyl-1-Hexanol
Ethyl acrylate	2-Ethylhexanoic Acid
n-nitrosodiethylamine	Ethyl mercaptan*
Ethylbenzene	Ethylidene norbornene
Ethyl Carbamate	Ethyl Propyl Acrolein
Ethyl Lactate	Ethylsuccinonitrile
Ethyl Mercaptan	Etoposide
Ethyl Methacrylate	Facet 75 DF Herbicide
Ethyl Methanesulfonate	Famphur
Ethyl Methyl Ketone	Fatty Acids
Ethyl Parathion (solid)	Fludioxonil
	Flumaric Acid

## APPROVED CHEMICAL LIST FOR HAZARDOUS WASTE OPERATIONS

Permit Number 4802/PSDTX1260

Page 7

Fluoroacetamide	Hexachloro-1,3-butadiene*
Fluoranthene	Hexachloroethane
Fluorosulfonic Acid	Hexachlorocyclopentadiene
Fluorotrichloromethane	Hexachlorophene
Fluorothene	Hexachloroprene (solid)
Formaldehyde*	Hexane
Formic Acid	1,6 hexamethylene diisocyanate*
No. 2 Fuel Oil	Hexamethylene-1,6-diisocyanate
Furan	Hexene
Furfural*	Hydraulic Oil*
Gasoline	Hydrazine
Gasoline Jet Fuel	Hydrazine, 1,2-diethyl-
Glutaric acid	1,2-dimethylhydrazine
2-methylglutaronitrile	Hydrazine Hydrate
Glycidaldehyde	Hydrochloric Acid, liquid
Glycol Acetate	Hydrocyanic Acid, liquefied
Glycol Diacetate	Hydrogen Chloride*
Grease	Hydrogen Cyanide
Guaiacol	Hydrogen Silesquioxane
Guanidine, N-methyl-N'-nitro-N-nitroso-	Hydrogen Sulfide
HBM (2-hydroxyisobutyric acid methyl ester)	Hydroquinone
Heptachlor (solid)	Hydroquinone Methyl Ether
Heptane	2-hydroxyisobutyric acid methyl ether
Heptanol	(HBM)
3-Heptanone	Hydroxylamine
Hexachlorobenzene	Indene*

## APPROVED CHEMICAL LIST FOR HAZARDOUS WASTE OPERATIONS

Permit Number 4802/PSDTX1260

Page 8

Indeno (1,2,3-CD) Pyrene	Malathion
Iron Sulfate	Maleic Anhydride*
Isobutanol	Malononitrile
Isobutyl Acetate	Manganese*
Isobutyraldehyde	Mefenoxam
Isodecyl Alcohol	Melphalan
Isooctane	Mercury
Isodrin	Methacrylonitrile
Isopar E	Methanethiol*
Isopar L	Methapyrilene
Isopentane	Methomyl Intermediate (MHTA)
Isoprene	Methoxychlor (solid)
Isopropanol	Methoxydihydropyran, liquid
Isopropyl Acetate	n-(2-Methoxy;-Methylethyl)-2,4-dimethyl-
Isopropyl Formate	2-amino-1-methoxypropane
Isopropyl Mercaptan	n-methylacetamide
Isosafrole	Methyl-3-13-(2H-benzotriazole-2-YL)-5-(tert)-butyl-4 hydroxy phenyl) propionate
Isozaflutole	Methyl Chloride
Kerosene	Methyl Chlorocarbonate
Ketone	Methyl Chloroform
Keto/enol	Methyl Cyclohexane
Lasiocarpine	Methyl Ethyl Ketone Peroxide
Lead Acetate	Methyl Glutanoitrile
Lindane*	2-Methylglutanronitrile
Lube Oils	1-Methoxy-2 Propanol
Magnesium Chloride	

## APPROVED CHEMICAL LIST FOR HAZARDOUS WASTE OPERATIONS

Permit Number 4802/PSDTX1260

Page 9

2-Methoxy-1 Propanol	n-methyl pyrillidone
Methyl Acetate	Methyl Tert-Butyl Ether
Methyl Acrylate*	tetramethylthiuram disulfide
Methyl Alcohol	n-nitroso-n-methylurethane
3-methylchlolanthrene	Methylal
Methyl Chlorocarbonate	Methylthiouracil
Methylcholanthrene-3	Methylcyclohexanol
n,n-bis-methylethyl	Methylene-bis-orthochloroaniline
Methyl Ethyl Ketone	Methylene Chloride
Methyl Ethyl Morpholine	Methylpyridine-2
Methyl Formate	Methyl vinyl bis (N-methylacetamindes) silane
3-methylhexane	Mitomycin c
Methyl Hydrazine	Molybdenum
Methyl Iodide	Monochloroethylene
Methyl Isobutyl Ketone	Monoethanolamine*
Methyl Isocyanate	Monoisopropylamine
1-Methyl-2-Pyrrolidinone NMP	Monomethyl ether hydroquinone
Methyl Mercaptan	Monopropylene Glycol
Methylmercaptopropionaldehyde	Morpholine
Methyl Methacrylate	Muscimol
n-methyl morpholine	Naphtha
Methylnapthalene*	Naphthalene
Methyl Parathion	1,4-naphthoquinone
4-methyl-2-pentanone	Napthylamine-beta (solid)
2-(3,5-bis(methylphenylethyl)-2	Nitric Acid
hydroxyphenylMethyl Propyl Ketone	

## APPROVED CHEMICAL LIST FOR HAZARDOUS WASTE OPERATIONS

Permit Number 4802/PSDTX1260

Page 10

Nitric Oxide	Orthovanillin
Nickel*	Paraldehyde
Nitroaniline-p (solid)	Pelargonic Acid*
Nitrobenzene*	Pentachlorobenzene
Nitrodium-n-butylamine-N	Pentachloroethane
Nitroglycerin (glyceryl)	n-pentane
Nitropropene-2	Pentanol
Nitrophenol*	n-Pentanoic Acid*
Nitrophenol-4 (solid)	Pentenitrile
2,4-dinitrophenol	3-pentenitrile
2-nitropropane	Perchloroethylene
Nitrosopipindine-n	Petroleum Distillates
Nitrosuliethylamine-n	Petroleum Distillates, Hydraulic Fluid
Nitro-o-toluidine-5	Petroleum Oil
Nitroso-N-ethylurea-N	Phenacetin
Nitroso-N-methylurea-N	Phenanthrene*
N-nitrosodi-N-propylamine	Phenol
m-Nitrotoluene	2,4 bis(alpha, alpha-dimethyl benzyl)
2,6-dinitrotoluene	phenol)
Nonanal	Phenothiazine
Nonene	4-bromophenyl phenyl ether
tert-nonyl mercaptan	Phenyl mercaptan
Novalar resins	Phosgene*
Octane	Phosphine*
Octanol	Phosphorus Pentasulfide
n-Octyl Mercaptan*	Phthalic anhydride

## APPROVED CHEMICAL LIST FOR HAZARDOUS WASTE OPERATIONS

Permit Number 4802/PSDTX1260

Page 11

Pinene-alpha	Propionic Acid
Pinene-beta	Propionitrile
Piperylene	Propionitrile, 3-chloro
Poast herbicide	Propyl Acetate
Polyester Glycol	Propylamine
Polyethylbenzene	Propyl Heptenal
Polyethylene	n-nitrosodi-n-propylamine
Polyethylene glycol dimethyl ether	Propylene
Polyisobutyleneamine	Propylene Dichloride
Polyoxyalkyleneamine	Propylene Glycol*
Polypropylene*	Propylene Glycol Acetate
Polystyrene	Propylene Glycol Methyl Ether
Potassium Acetate	Propylene Glycol Monoethyl Ether
Potassium Carbonate	Propylene Glycol Monoethyl Ether Acetate
Process Oil	Propyleneimine, inhibited
Promamide	n-Propylmercaptan*
Propane	Propxur
2-amino-1,3-propanediol	Pyridine*
2-amino-2-ethyl-1,3-propanediol	Pyridine, 4-amino-
2-amino-2-methyl-1,3-propanediol	n-nitrosopyrrolidine
Propane Sultone	n-vinyl-2-pyrrolidinone
Propanil	Quaternarium Salts
Propanol	Quintozene (solid)
2-amino-2-methyl-propanol	Reactive Sulfides
Propargyl Alcohol*	Red Oil
Propionaldehyde*	Reserpine



## APPROVED CHEMICAL LIST FOR HAZARDOUS WASTE OPERATIONS

Permit Number 4802/PSDTX1260

Page 12

Resorcinol	Tert Amyl Alcohol
Rhodium*	Tert Butyl Alcohol
Safrole	Di-tert nonyl polysulfide (TNPS)
Sassafras Oil	Tertiary amine
Selenium*	Tetrachloroethane
Soap	Tetrachloroethylene
Sodium Hydroxide*	Tetraethylene Glycol
Sodium Hypochlorite	Tetrahydrofuran
Sodium Methoxide	Tetrahydrothiophene
Sodium Methylmeraptide	Thiamethoxam
Sodium Nitrate	Thioacetamide (solid)
Sodium Sulfate*	Thiofanox
Sodium Sulfide	1-acetyl-2-thiourea
Sodium Thiosulfate*	Thiourea (2-chlorophenyl)-
Sosafrole-1	TDI Polymers*
Succinic acid	Thiosemicarbazide (solid)
Succionitrile	Titanium tetrachloride
Sulfolane	Toluene
Sulfur*	Toluene Diamine*
Styrene	o-toluenediamine
Sulfate Turpentine	2,4-toluene diisocyanate
Sulfolane	2,6-toluene diisocyanate
Sulfurized isobutylene	o-toluic acid
Taxol	Toluidine
Terbufos	Toluidine hydrochloride-o
Terphenyl	4-chloro-o-toluidine hydrochloride

## APPROVED CHEMICAL LIST FOR HAZARDOUS WASTE OPERATIONS

Permit Number 4802/PSDTX1260

Page 13

Toxaphene*	Vinyl Acetate
Triallyl Amine*	Vinyl Acetate Polymer
Tributylamine	Vinyl Chloride
Tributyl phosphate	4-Vinyl cyclohexene-1*
1,2,4-Trichlorobenzene	Vinyl Methyl Ether
1,1,1-Trichloroethane	Vinylidene
1,1,2-Trichloroethane	Vinylidene Chloride
Trichloroethene	Vinyltrimethoxysilane
Trichloroethylene	Warfarin*
Trichlorofluoromethane	p-Xylene
Tridecane	Xylene
Triethanolamine*	Xylidine (p-dimethylaminoazobenzene)
Triethylamine*	* These compounds are subject to the emission rate limits of the July 2004 dispersion modeling report.
Triethylene Glycol	
Trifluralin	
Trimellitic Anhydride	
Trimethylbenzene	
Tripolyamine	
Tri-n-propylamine*	Dated: <u>July 26, 2018</u>
2,4,6-Trinitrophenol*	
Trypan blue	
Undecane	
Uracil Mustard	
n-Valeraldehyde	
4-keto-1-valeric acid	
Vanillin	

# Emission Sources - Maximum Allowable Emission Rates

Permit Number 4802/PSDTX1260

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities, sources, and related activities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

## Air Contaminants Data

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
104	Regeneration Unit No. 2 Stack	Cl <sub>2</sub>	0.01	0.05
		CO	5.70	25.00
		H <sub>2</sub> SO <sub>4</sub> (8)	7.19	20.99
		HCl	0.16	0.70
		NO <sub>x</sub>	37.20	61.95
		PM	4.01	12.47
		PM <sub>10</sub>	4.01	12.47
		PM <sub>2.5</sub>	4.01	12.47
		SO <sub>2</sub>	143.75	377.78
		VOC	0.01	0.01
104	VOCs from Natural Gas Combustion	VOC	0.46	1.10
104	Railcar Depressurizing, Tank Truck Depressurizing, and Tanks 48, 49, 53, 56, and 78	SO <sub>2</sub>	0.46	0.13
		VOC	0.01	0.01
120	Vapor Combustor Standby Operation	CO	1.51	3.33
		NO <sub>x</sub>	1.80	3.96
		PM	0.14	0.30
		PM <sub>10</sub>	0.14	0.30
		PM <sub>2.5</sub>	0.14	0.30
		SO <sub>2</sub>	0.01	0.02
		VOC	0.10	0.22

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
120	Vapor Combustor (As backup control device, up to 1,314 hours per rolling 12-months)	Cl <sub>2</sub>	0.14	0.09
		CO	0.40	0.27
		HCl	0.06	0.04
		NO <sub>x</sub>	0.48	0.32
		PM	0.04	0.02
		PM <sub>10</sub>	0.04	0.02
		PM <sub>2.5</sub>	0.04	0.02
		SO <sub>2</sub>	0.01	0.01
		VOC	22.22	3.41
128	Regenerator No. 2 Preheater (1,000 hours per rolling 12-months)	CO	2.07	1.03
		NO <sub>x</sub>	2.46	1.23
		PM	0.19	0.10
		PM <sub>10</sub>	0.19	0.10
		PM <sub>2.5</sub>	0.19	0.10
		SO <sub>2</sub>	0.02	0.01
		VOC	0.14	0.07
170	Vapor Combustor 2 Standby Operation	CO	4.28	0.30
		NO <sub>x</sub>	2.15	0.15
		SO <sub>2</sub>	0.01	0.01
		VOC	0.08	0.01
170	Vapor Combustor 2 (As backup control device, up to 1,314 hours per rolling 12-months)	Cl <sub>2</sub>	0.39	0.04
		CO	15.30	5.06
		HCl	1.99	0.19
		NO <sub>x</sub>	1.78	0.59
		SO <sub>2</sub>	1.91	0.18
		VOC	12.23	1.19

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
170	Vapor Combustor 2 (6) (Storage Tanks 48, 49, 53, and 56 Planned Inspection Purge)	CO	10.81	1.48
		NO <sub>x</sub>	1.26	0.17
		SO <sub>2</sub>	0.02	0.01
		VOC	0.05	0.01
CATSCNR2	Catalyst Screening for Regeneration Unit No. 2 Converter (6)	PM	0.01	0.01
		PM <sub>10</sub>	0.01	0.01
		PM <sub>2.5</sub>	0.01	0.01
MSS-HAZTK1	Hazardous Waste Tanks (F2, and F3) and T554, Planned MSS Purge (6)	VOC	0.02	0.01
MSS-HAZTK2	Hazardous Waste Tanks (B1, B2, H1, and H2) Planned MSS Purge (6)	VOC	0.01	0.01
TKINSPMSS1	Tank 78 Planned Inspection Purge (6)	CO	3.04	0.75
		C <sub>2</sub> H <sub>4</sub>	0.01	0.01
		NO <sub>x</sub>	1.12	0.35
		SO <sub>2</sub>	0.08	0.09
		VOC (7)	0.05	0.06
TKINSPMSS2	Tanks 48, 49, 53, and 56 Planned Inspection Purge (6)	CO	3.04	0.40
		C <sub>2</sub> H <sub>4</sub>	0.01	0.01
		NO <sub>x</sub>	1.12	0.19
		SO <sub>2</sub>	0.08	0.01
		VOC (7)	0.05	0.01
FE2	Process Fugitives (5)	SO <sub>2</sub>	0.05	0.20
FE3	Process Fugitives (5)	SO <sub>2</sub>	0.01	0.03
FE-12	Fugitives from HW Equipment (5)	VOC	0.04	0.19
FE-13	Fugitives from HW Equipment (5)	VOC	0.02	0.10
FE-14	Fugitives from HW Equipment (5)	VOC	0.01	0.01

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
FUG-SA1	Spent Acid Process Fugitives (5)	H <sub>2</sub> SO <sub>4</sub>	0.41	1.79
		SO <sub>2</sub>	0.12	0.37
		VOC	0.09	0.35
FUG-SA2	Spent Acid Process Fugitives (5)	H <sub>2</sub> SO <sub>4</sub>	0.07	0.31
		SO <sub>2</sub>	0.03	0.08
		VOC	0.02	0.07
FUG-SA3	Spent Acid Process Fugitives (5)	H <sub>2</sub> SO <sub>4</sub>	0.03	0.11
		SO <sub>2</sub>	0.06	0.18
		VOC	0.03	0.08
FUG-SA4	Spent Acid Process Fugitives (5)	H <sub>2</sub> SO <sub>4</sub>	0.30	1.34
		SO <sub>2</sub>	0.13	0.38
		VOC	0.08	0.30

- (1) Emission point identification - either specific equipment designation or emission point number from plot plan.  
(2) Specific point source name. For fugitive sources, use area name or fugitive source name.  
(3) C<sub>2</sub>H<sub>4</sub> - ethylene  
VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1  
H<sub>2</sub>SO<sub>4</sub> - sulfuric acid  
Cl<sub>2</sub> - chlorine  
NO<sub>x</sub> - total oxides of nitrogen  
SO<sub>2</sub> - sulfur dioxide  
PM - total particulate matter, suspended in the atmosphere, including PM<sub>10</sub> and PM<sub>2.5</sub>, as represented  
PM<sub>10</sub> - total particulate matter equal to or less than 10 microns in diameter, including PM<sub>2.5</sub>, as represented  
PM<sub>2.5</sub> - particulate matter equal to or less than 2.5 microns in diameter  
CO - carbon monoxide  
HCl - hydrogen chloride  
(4) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period.  
(5) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.  
(6) Planned startup, shutdown and maintenance emissions  
(7) Ethylene emissions are not included in the VOC emission total.  
(8) PSDTX1260 pollutant

Date: July 26, 2018